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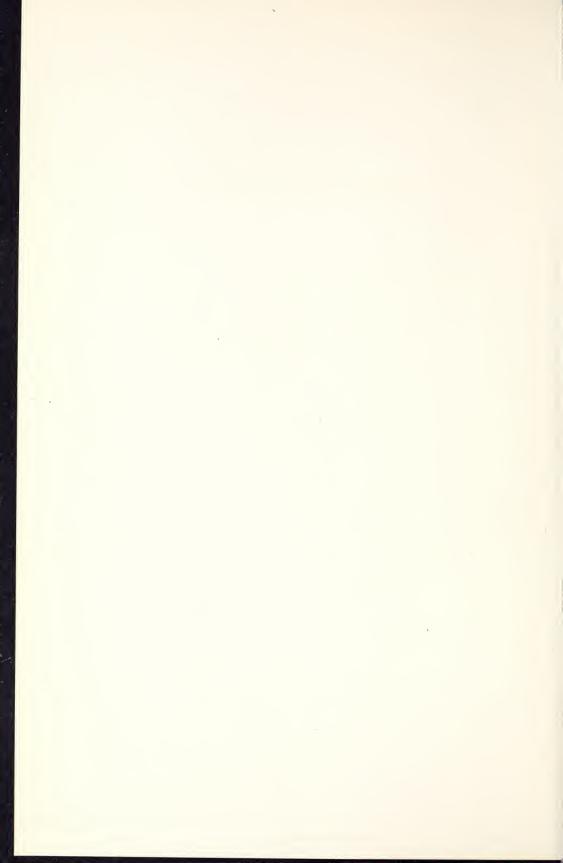


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## Cases in CONTROLLERSHIP



# CASES IN CONTROLLERSHIP

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PRENTICE-HALL, INC.

Englewood Cliffs, N. J.

\_\_\_\_ 1958 \_\_\_\_\_

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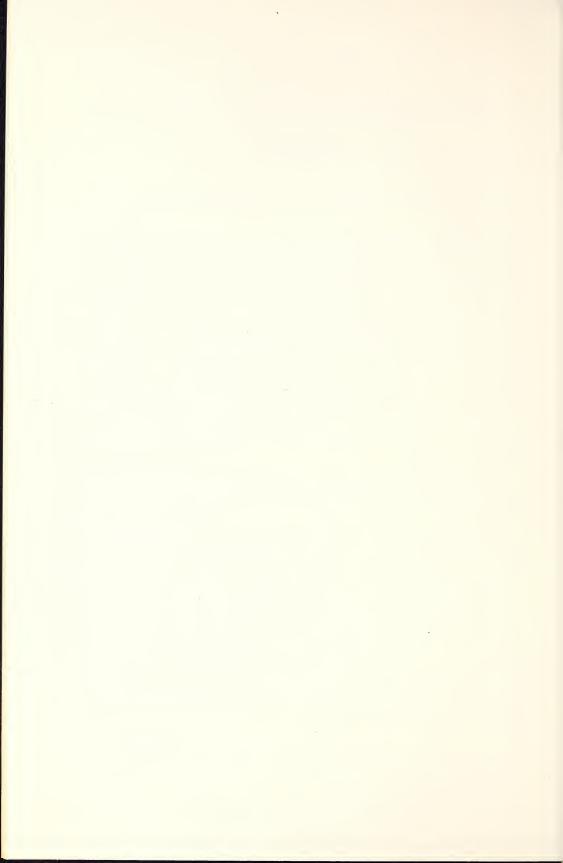
### Preface

The purpose of this book is to provide a collection of case materials that will be useful as a basis for study of that area of business management generally known as controllership. The book is not intended to provide technical training in accounting; in fact, it assumes a knowledge of the fundamentals of accounting. The materials included in the book are designed to provide the student a means of gaining an understanding of an important dimension of the controller function which is frequently overlooked in accounting curricula—the relationship of the work of the controller or financial officer to the operating functions of the business organization. The book also places heavy emphasis on the analytical aspects of the controller function. The aim is to develop skills of analysis and practice of judgment through a series of experiences with actual business situations.

All of the cases in this book were developed for use in courses at the Harvard Business School, and are copyrighted by the President and Fellows of Harvard College.

A number of people have been instrumental in bringing this book into being. Many of the cases were prepared by William Rotch, William Jerome III, John Hamilton, and Richard Kislik, as staff members of the Harvard Business School. Professors Edmund P. Learned and Robert N. Anthony have also contributed to the case materials. Miss Jane Clark and Miss Justine McCarthy have borne the brunt of the secretarial work. To all of these, and to the companies who made it possible for the cases to be collected in the first place, we are particularly indebted. We of course owe much to the influence, through their counsel and advice, of many colleagues and associates; their contributions, although not so direct and apparent, are nonetheless real.

R.H.H. N.E.H.



## List of Cases

### SECTION ONE

### The Nature of the Controller Function

1.	HUTTER COMPANY: Organization for Management Control	8
2.		
	the Organization	29
3.	THE BEARDSLEY CHEMICAL COMPANY: Decentralization	
	of Accounts Receivable	31
4.	STRATFORD FOODS, INCORPORATED (I): Organization	
	of the Accounting Function	36
5.	BEECROFT MANUFACTURING COMPANY: The	
	Formulation of Accounting Statements and Their Use by	
	Senior Executives	46
	SECTION TWO	
	Internal Control and Internal Audit	
6.	OATSY-TOASTY COMPANY: Problem of Internal Control	54
7.	HARTSHORN FURNITURE COMPANY: Problem of Internal	
	Control	64
8.	HILLYARD IRON WORKS, INCORPORATED: Raw	
	Material Control	65
9.	DRAYER-HANSON, INCORPORATED: Work in Process	
	Inventory Control in the Matter of Drayer-Hanson, Incorporated	71
LO.	•	
	Capital Costs	81
l1.	STRATFORD FOODS, INCORPORATED (II): Establishing	
	a Program of Internal Audit	100
12.	e e e e e e e e e e e e e e e e e e e	105

viii	LIST OF CASES	
13. 14.	NORTHERN ALLIANCE COMPANY: Internal Audit Report THE DOLPHIN MANUFACTURING COMPANY: The	128
	Internal Audit Follow-up	137
15.	THE WESTCO OIL COMPANY: Functional Internal Auditing Activities	149
	SECTION THREE	
	Accounting Policy	
16.	CONSOLIDATED LEATHER COMPANY: Selection of	
	Method of Inventory Valuation (LIFO)	158
17.	BALFORD AUTOMOTIVE PARTS, INCORPORATED:	
	Procedures for the Control of Fixed Asset Additions	175
18.	TERRINI CONSTRUCTION COMPANY: Purposes of	
	Depreciation	183
19.	SHIPSTEAD ELECTRONICS CORPORATION: Depreciation	
	of Fixed Assets	188
	1	193
21.	THE REECE CORPORATION: The Impact of Inflation on	
	Corporate Reporting	210
22.	THE PAN AMERICAN CORPORATION: Intangible Assets	214
	SECTION FOUR	
	The Dele of Financial Analysis in the	
	The Role of Financial Analysis in the Management Process	
23.		219
24.	BOWL-A-WAY: Appraising Capital Expenditure Projects	226
25.	CONTINENTAL OIL COMPANY: Appraisal of Capital	
	Investments	231
26.	VELOX OIL COMPANY: Capital Investments	251
27.	BLACKSTONE MINING COMPANY: A Problem in Business	
	Investment	262
28.	ACADIA AUTO ACCESSORIES, INCORPORATED: Self-	
	Insurance on Workmen's Compensation	266
29.	THE NEW ENGLAND BAKING COMPANY: Review of	

30. GLOBAL CHEMICAL COMPANY: Control of Research

279

292

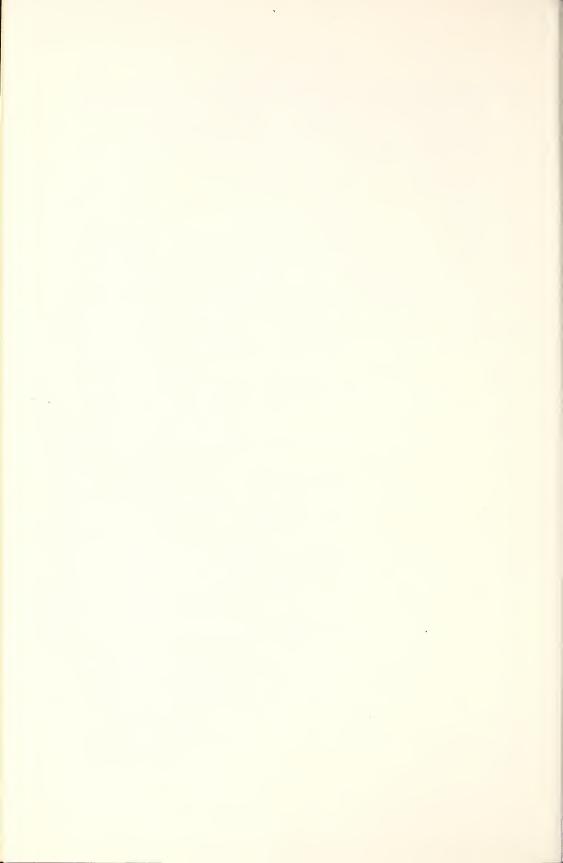
Insurance Carrier

Expenditures

### LIST OF CASES

ix

31.	THE SOUTH AMERICAN COFFEE COMPANY: Data for	
	Management Use	302
32.	ALBERTSON STEEL COMPANY: Cash Procedure and	
	Control	307
33.	THE WRIGHT KNIGHT COMPANY: Measures of	
	Performance	321
34.	HYDROCARBON PRODUCTS COMPANY, INC.: Transfer	
	Pricing	323
35.	BIRCH PAPER COMPANY: Administering Transfer Price	
	Policy	334
36.	LONG MANUFACTURING COMPANY: Allocation of Assets	
	to Decentralized Divisions	337
37.	BORAH PETROLEUM COMPANY: Analyzing and Reporting	
	Operating Results	340
28	CLARK CHEMICAL COMPANY: A Question of Jurisdiction	2/10



## Cases in CONTROLLERSHIP



## Introduction

THIS BOOK IS A COLLECTION OF CASES DEALING WITH THE TASK OF PROVIDING information for business management. More specifically, it is concerned with the collection, analysis, interpretation, and presentation of information—usually figure data—which are important bases for management's decision-making and follow-up activities.

### The Controller Function

The collection, analysis, interpretation, and presentation of management information are generally grouped under the term controller function. The controller, or his equivalent, typically reports directly to the president or through an intermediate level such as the vice-president of finance. In some instances a portion of the controller function may even be performed by another department of the business organization, for example, an "economic analysis" department, or a department for "coordination and planning." We should emphasize that the term "controller function" as used here, does not mean merely the job of recording accounting data. It embraces the broader function which, in addition to accounting activities, also provides, through its analytical and interpretive skills, accounting and statistical information tailored to specific needs of management.

### Development of the Controller Function

The growth of the controller function from the job of keeping the accounts of an enterprise into the broader role which it now plays in business management has been, for the most part, a development of the twentieth century. And it has been only since the early 1930's that the function has reached anything like a professional status. The broadening scope of the controller's role beyond that of custodian of records was emphasized by the formation, in 1931, of the Controllers Institute of America. The purposes set forth by the Institute attest to the recognition

of this broader responsibility of the controller. These were:

- 1. To develop a progressive concept of controllership, adequate to meet the requirements of modern business;
- To educate business management and the public in the understanding of this concept;
- 3. To assist controllers to give full expression to this concept in their own organizations;
- 4. To provide controllers with a medium through which they may receive and exchange ideas in the field of business management;
- 5. To constitute an articulate body of management opinion on matters within the scope of the controller's responsibility;
- 6. And, by doing these things, to contribute toward soundness in business, in education, in government, and in the national economy.

The Institute also compiled the following list of duties of the controller, which provides an indication of that organization's view of the functions of its members.

- 1. The installation and supervision of all accounting records of the corporation.
- 2. The preparation and interpretation of the financial statements and reports of the corporation.
- 3. The continuous audit of all accounts and records of the corporation wherever located.
- 4. The compilation of production costs.
- 5. The compilation of costs of distribution.
- 6. The taking and costing of all physical inventories.
- 7. The preparation and filing of tax returns and the supervision of all matters relating to taxes.
- 8. The preparation and interpretation of all statistical records and reports of the corporation.
- 9. The preparation, as budget director, in conjunction with other officers and department heads, of an annual budget covering all activities of the corporation, for submission to the Board of Directors prior to the beginning of the fiscal year. The authority of the controller, with respect to the veto of commitments or expenditures not authorized by the budget, shall, from time to time, be fixed by the Board of Directors.
- 10. The ascertainment currently that the properties of the corporation are properly and adequately insured.
- 11. The initiation, preparation, and issuance of standard practices relating to all accounting matters and procedures and the co-

- ordination of systems throughout the corporation, including clerical and office methods, records, reports, and procedures.
- 12. The maintenance of adequate records of authorized appropriations and the determination that all sums expended pursuant thereto are properly accounted for.
- 13. The ascertainment currently that financial transactions covered by minutes of the Board of Directors and/or the Executive Committee are properly executed and recorded.
- 14. The maintenance of adequate records of all contracts and leases.
- 15. The approval for payment (and/or countersigning) of all checks, promissory notes, and other negotiable instruments of the corporation which have been authorized by the by-laws of the corporation or from time to time designated by the Board of Directors.
- 16. The examination of all warrants for the withdrawal of securities from the vaults of the corporation and the determination that such withdrawals are made in conformity with the by-laws and/or regulations established from time to time by the Board of Directors.
- 17. The preparation or approval of the regulations or standard practices required to assure compliance with orders or regulations issued by duly constituted governmental agencies.

Clearly, the controller, if he was to serve the broader purposes envisioned by this new segment of a professional management, had to expand the scope of his activities to include far more than the conventional accounting operations of the past.

However, if the controller function was enormously expanded from the beginning of the 1930's through World War II, its growth since World War II, and especially during the period from 1950, has been even greater. The new attention given to the area of capital budgeting during recent years is an outstanding example. The wider recognition of the present worth of future flows of money has just begun to work its way from the financial world into the bailiwick of the industrial controller. The concept of return on investment as a measure of performance in decentralized divisional operations was until fairly recently new to all but a few business organizations. The number of companies which make extensive use of economic and statistical analyses as an aid in the decisionmaking process is still not impressive; and operations research departments have only begun to concern themselves with the process of business management. Their mathematical tools will undoubtedly, in due time, be brought to bear on the problems of business analysis. Analytical processes which in the past have been well beyond the reach of the

controller function are daily being made feasible by high-speed com-

The extension of the controller function has created new problems for the student who would prepare himself to take part in this important phase of business management. It is no longer sufficient that he attain a reasonable mastery in the field of accounting; for he may, when he moves onto the management scene, find himself responsible for a variety of economic, statistical, and mathematical analyses-all in addition to the more or less central function of processing accounting information. And if these analytical processes are to provide useful information for operating management, the controller must be able to communicate the results effectively. Consequently, he must have sufficient knowledge of the production, marketing, and financial functions to permit him to work intelligently with individuals directly concerned with these areas. He must also have an understanding of the more general management functions of organization and planning. The formal training offered the student interested in preparing for this area should be adapted to this basic change in the nature of the controller function.

### Scope of This Book

In this book, we are not talking about what controllers do. This is not a manual on how to be a controller. The list of cases is not all-inclusive; it does not "blueprint" the controller's job. It is, instead, a collection of materials designed to show what the controller function, in its broadest management sense, is. The authors have not included problems which deal specifically with accounting technique, systems design and installation, selection of accounting equipment and personnel, etc. This is not to minimize in any sense the importance of these areas, however. A number of excellent books which deal effectively with this type of training are already available, and it is not our intention to duplicate, or add to, these materials.

It is, of course, inevitable, in discussing a range of issues which the controller may face in his role as adviser to management, that some of the actual problems involved in operating a controller organization will be raised. The main thrust of the book is, nevertheless, to the more inclusive nature of the controller function as an integral part of management. It includes, therefore, cases selected and developed from situations typical of the wide range of problems with which the controller is concerned—cases which offer a number of opportunities, in a "real world" business context, for the development of the analytical skills which provide one of the qualifications most essential to an effective role for the controller in business management.

It has almost become trite to say that the controller's job is to render a service to management. One would probably find it difficult to point to a controller anywhere who would not support this view. Yet we continue to hear stories of sharp conflict between operating departments and the controller's office. Mr. Botts of the Earthworm Tractor Company is not alone in his contempt for that "damned penny-pinching controller."

Perhaps a part of this conflict comes from a lack of agreement on what constitutes "service to management." Too often, the controller's office creates the impression that by "service" it means telling operating departments how to run their jobs. The authors believe, however, that by far the most common reason for conflict between the controller and the operating departments is not disagreement over jurisdiction, but simply poor communication. Frequently in reporting operating results—the production of goods and services-and measuring them against the amount of materials and effort expended, the controller is the bearer of bad news. Although his attitude may be one of strictest objectivity and his work a model of technical application, he may, and too frequently does, incur the wrath of the supervisor whose substandard performance is being reported. Clearly, technical competence and objectivity are not enough. The controller needs, in addition, an understanding and a special outlook. He must have a respect for the desires and motivations of the individuals who have created the results which he must reduce to figures and report to management. To perform this unhappy duty, and still preserve the effective working relationship which must exist between the controller and the management he is to serve, provides perhaps the ultimate test of the controller's skill. Unless he can fulfill this requirement effectively, his chances of success as a part of total management-the management team—are materially reduced.

#### Some Comments on the Use of Cases

This book contains no textual materials, and in that respect differs markedly from the great majority of "text books" in the field of accounting and control. Since the book may represent the student's first experience in dealing primarily with case materials, it is perhaps necessary to point out two important differences which may exist between a "case method" approach and the more widely used "text" approach in studying the general field of accounting.

In the "text" approach, the usual procedure is to introduce the student to a particular technique or tool and then illustrate, through problem materials, how the technique or tool is applied. In this book the focus is almost exclusively upon management problems, leaving to the student the burden of providing, either from prior training or from supplementary reading and study, the mechanical or analytical tool needed. This shift of focus may seem burdensome at first, but as the student progresses it should become natural to him. Needless to say, in the business world management problems do not present themselves together with a package of instructions as to how they should be solved.

The second distinction between the materials in this book and those of a majority of the textbooks with which most of the students using the book will be accustomed is that there is no one "correct" solution to a case. The instructor has, or should have, no answer to hand the student at the end of the class hour. If he has, it should not automatically be regarded as the only correct answer. The instructor's role will be to require the student to test his own reasoning and defend his position, through class discussion, against the questioning and examination of class members, who may have used different approaches, and of the instructor whose interest will be primarily in seeing that the student's decisions reflect breadth of view as well as depth of analysis. The student must be able to see the problem as his problem, his decision-not one which he is solving for someone else. That is simply to say that the closer the student can come to seeing management problems through management's eyes, the more nearly he is approaching the time when he can perform a part of the controller function himself.

The materials included in this casebook provide numerous opportunities for the student to apply and develop his technical training in a total, living, administrative structure and climate, of which he is a vital part and where the relationship between the controller and operating management—not in some vague general sense, but in specific concrete situations—is always a concern. It is hoped that the repeated experience of attacking the controller's problems in their natural context will encourage and aid the student in turning a technical competence into an effective management skill.

# The Nature of the Controller Function

This section deals with the problem of relating the control function organizationally and administratively to the broad area of business management. The case materials focus on the question of how the controller function may best be fitted into the organizational structure to facilitate the use of accounting and statistical data in the management of a company's operations. Some of the difficulties in fixing duties and responsibilities for the performance of this function are examined. The job description, the title, and the organization may vary from one case to another, but the central issue in all the cases is the function of providing and interpreting quantitative information for management's use. Major attention is directed to the important and ever present problem of establishing an effective working relationship between the controller and the various other members of the management team.

- 1. Hutter Company
- 2. Argosy Chemical Co.
- 3. The Beardsley Chemical Company
- 4. Stratford Foods, Incorporated (I)
- 5. Beecroft Manufacturing Company

### case 1

### **HUTTER COMPANY**

### Organization for Management Control

This case raises the question of how to organize the controller function to facilitate control by top management in an atmosphere where the avowed intention of the management is to encourage decentralized management action. Also involved in this case is the problem of adapting the controller function to fundamental changes in the nature of a company's operation—in this instance from a reasonably non-competitive war-defense-type effort to the highly competitive conditions of a postwar civilian market.

### Background

The Hutter Company was founded during World War I by a small group of men primarily interested in automobile stunt racing. They organized the company to make fabricated parts for military aircraft engines. When the war ended, the company had two small plants, no peacetime products, an organization young both in age and in the maturity of its experience, and few financial resources. The readjustment period that followed the war was therefore difficult. According to Mr. Daniel Hall, later chairman of the board of directors, the organization contained a core of enthusiastic adventurers who would never take "no" for an answer. These men believed that their immediate future lay in making parts for the automobile industry. After 1921 the company was able to capitalize sufficiently upon the great growth of automobile demand to remain in business. Lack of strong backing among the directors prevented the active management group from expanding the company as it desired. To most of the directors and principal stockholders the Hutter Company was a business hobby rather than a main business interest. The result was that in 1938 the company was a relatively small concern making automotive and aircraft engine parts, and carrying on experimental work on a small scale.

During the period from 1921 to 1938 there was some turnover in the management group. A few men retired because of age, others sought better business opportunities, and several young men who shared the adventurous spirit of the founders joined the company. These men developed new products which were expected to appeal to the automobile manufacturers and air-transport companies. They worked on other products in cooperation with the Army Air Corps and Army and Navy Ordnance. These government agencies, however, had small appropriations for such work during this period, and little money was available in the company itself, with the result that many items got no further than the drawingboard stage, only a few were perfected to experimental state, and fewer still were marketed, and those only in small volume. Partly in order to save money for developmental work and partly because the small scale of operation did not require elaborate controls, the company had kept at an irreducible minimum the expenses for cost accounting systems, operating statistics, budget procedures, and the like. According to Mr. Hall, in 1938 there were few useful facts on operations or costs available for management use. Such was the general condition of the company before World War II began.

### **Expansion in World War II**

After Munich, the tempo changed for the Hutter Company. Both armament orders from Europe and the defense program of the United States increased the sales of the company. The inherent value of the past developmental work in its relation to the war became evident, and the directors decided to expand on a large scale. This action required new financing. To assist in this undertaking, the directors elected Mr. Daniel Hall to the chairmanship of the board and made the position a full-time one for the period of the emergency.

Under the pressure of the defense and war programs, the Hutter Company grew rapidly. The company increased the number of plants from two to fifteen, and old plants were expanded. The employed personnel increased more than fortyfold. Old management was spread thin, promotions were rapid, and many new employees at all levels of management and supervision had to be recruited from peacetime industries. Both the chairman and the president agreed that it took from December, 1940, to April, 1944, for the full expansion to bear fruit. It was in April, 1944, that production reached its peak. By that time, organizational relationships were reasonably

well established and most of the "bugs" were out of both products and organization. In the opinion of several vice-presidents, most personnel were proud of results to date, even though they were somewhat weary from the stresses and strains of organization and reorganization at various levels.

### Daniel Hall—Chairman of the Board

Hall had long been a stockholder and director of the company. He was a close personal friend of Mr. Parsons, the president, as well as of several of the vice-presidents, and had served in the Army with some of them in World War I. Since he wanted to aid the defense and, later, the war effort, he believed that he could do so by accepting the chairmanship of the board. He therefore retired from his banking connections in a large midwestern city and joined the Hutter Company on a full time basis in 1940. According to Parsons and several of the vice-presidents, Hall, who was 50, had a striking personality. His associates admired his keen mind, his capacity to penetrate to fundamental problems and issues promptly and effectively, and his willingness to back with all his resourcefulness and wholehearted support any idea that appeared to make the company function more effectively. He was respected by everyone and, though his suggestions were never taken as "orders" except when so worded, nearly all executive personnel weighted heavily any comments or suggestions from Hall because their experience with, and analysis of, his suggestions so often verified his wisdom. In his relationships with other executives Hall never revealed excessive confidence in his own thinking, nor did he often make formal suggestions. The principal way in which he induced subordinates to act was by asking and continuing to ask penetrating questions until he received thoroughly thought out answers. According to one vice-president, Hall ordinarily conveyed an impression of confidence in his subordinates when he interviewed them on policy or operating matters. They freely admitted to each other the uneasiness which Hall's questions often caused. In the light of this background, all of those who were concerned in 1946 gave serious consideration to Hall's proposal to merge three departments as outlined below.

Hall's activities in connection with his position as chairman of the board included public relations, relations with the government on financing of expansion, review of general policy matters with the president, monthly review of operating results, and corporate financial problems. He wanted a strong operating organization and he conferred frequently with the president on operating matters. It was necessary, however, for one of them to give more attention to financial requirements and Hall had accepted this division of responsibility. He thus had a deep concern over the company's financial budgets and plans. Hall and Parsons cooperated effectively on these and other matters. The mutual regard which they had for each other's ability and their close cooperation and discussion of problems resulted in an appearance of singlemindedness. Any major differences which they may have had were not apparent to subordinate officers. The major burden of policy formulation and execution was left to Parsons and the vice-presidents on his staff.

### Eugene Parsons—President

Mr. Eugene Parsons, the president, had been associated with the Hutter Company from the beginning. According to Hall, Parsons had imagination, and was quick to grasp new scientific ideas as well as to see their long-run implications to the technology of the company and the industry. He was an innovator. Some said he liked to play with new gadgets. Hall attributed the success of the company during World War II to the daring innovations in products which Parsons was willing to make in cooperation with the armed services. Parson's ideas were often far ahead of those of his vice-presidents. They thought some of his ideas fantastic, and his ever-present drive to force them to convert ideas into real products—tested in use in "much too short" spans of time-often irritated them. They had difficulty at times in understanding what he wanted, and sometimes they had a tendency to resist change. They felt insecure in their positions when Parsons was pressing hard for the production of a product on which the technical problems of production presented formidable obstacles. They found it hard to explain to Parsons why an idea was "impractical" from a production point of view. He did not like to take "no" for an answer without a trial. His conception of a "fair try" was considered exceptionally arduous by his subordinates. If the organization really tried to make a product or change a process, and failed, Parsons was willing to face the facts and give it up, turning to some other solution. As a result of this drive and determination to get the job done, the "impossible" was often accomplished;

sometimes, to be sure, at the cost of a subordinate who did not make good.

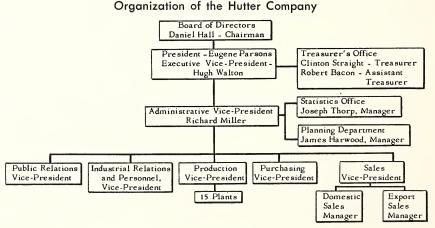
According to Hall, many of the vice-presidents were afraid of Parsons. Nevertheless, most of the time, Parsons expressed himself in a most friendly manner. This characteristic, added to the satisfaction which arises in an organization from accomplishing the seemingly impossible, brought considerable personal loyalty and affection to Parsons from his vice-presidents and subordinate executives.

### Organization-1945

The key top management personnel and the heads of departments affected by the problem presented herewith are shown in the organization chart in Exhibit 1. Additional information about the executives follows.

Hugh Walton—Executive Vice-President. Mr. Hugh Walton assisted Parsons and acted for him in his absence. Walton followed operating details more closely than Parsons, thus freeing the latter for broad policy-making functions. Walton tried to reduce the amount of work for Parsons by making those policy and operating decisions that flowed naturally from existing understandings between the two of them. Where there was general agreement among the vice-presidents upon a policy or operating plan, Walton approved it unless it was a matter which he knew to be of personal interest to Hall or Parsons.

EXHIBIT 1



Walton was a man of about 50 years of age who had wide experience within the Hutter Company. He had grown up in the production end of the business, having been manager of one of the domestic plants. At one time he was in charge of the export department and he had also served for a brief period as vice-president in charge of production. His versatility was indicated by the fact that he had also been in charge of public relations just before his election to the post of executive vice-president. He was particularly adept at maintaining good public relations for the company. He was socially successful, and in this capacity was a credit to the concern, so much so that he was criticized in the cloakrooms, corridors, and lunchrooms. Some people questioned whether he really had as much ability as his position implied. According to one of the vice-presidents, Walton did not always appear to be certain of his relationship either to the president or to Hall and was a man who would let well enough alone when he could. Some of his subordinates believed that he was slow to make decisions and in that respect was an impediment to progress; others felt that this slowness in some instances had been a tremendous protection to the company because it had thus avoided headlong and probably incorrect decisions.

Clinton Straight—Treasurer. Since the financial problem was of so much interest to the top officers, the treasurer was shown on the chart reporting directly to the president and executive vice-president. The treasurer's office was charged with the supervision and administration of all budget and financial functions. It was expected (a) to outline a financial program which would enable the company to carry out its current marketing and production plans and to finance its longer term capital requirements; (b) to prescribe the kind of budgeting and accounting organizations needed in the various offices and plants, and to outline systems, methods, procedures, and necessary financial reports required of all parts of the company; (c) to conduct supervisory activities for compliance with the above mentioned methods and policies; and (d) to direct the audit functions of the company.

Clinton Straight, who was treasurer, was a wealthy man of 50. Having married well and invested and speculated successfully, he was proposing to retire to his country estate after the war and en-

gage in the breeding of race horses. He prided himself on the fact that "the business did not get him down."

Straight believed in decentralization and claimed that he practiced it. He established a financial office under a manager in each plant as well as in the export and sales departments. These managers were under the line control of the head of the department or plant which they served and provided the managers and other executives with such reports as they requested. The organizations under these plant or department finance managers recorded expenses in accordance with a home office manual of expense classifications and related these expenses to major budget classifications or capital appropriations approved by the board and the president. Furthermore when requested by plant managers or department heads the managers kept cost accounts and made cost analyses. There was no uniform cost system employed in all plants. In Straight's opinion, he did not interfere with the operation of the finance office in each plant or department. He was satisfied that the procedures and methods prescribed by his office insured that all cash, incoming and outgoing, was properly accounted for and protected.

Richard Miller-Administrative Vice-President. During the war the burden on top management had become so great and so many consequential policy and operating decisions had to be made that the company created the position of administrative vice-president. This position was filled by Richard Miller. He was a likable man of 55 who had been with the company for 25 years. He relied upon the vice-presidents below him to take the initiative in drawing up policy proposals and preparing operating plans. He reviewed their proposals to make sure that they had been broadly considered; for instance when the vice-president in charge of sales proposed a plan for the modification, elimination, or addition of a new product, he checked to determine whether the effect on production, purchasing, personnel, and public relations had been adequately studied. Much of his time was given to verification of such facts and to conferences with vice-presidents or their representatives to resolve differences of opinion. After Miller's review of major plans and proposals, Executive Vice-President Walton or President Parsons took the necessary action to approve or revise plans, after which the domestic

plants, sales, and export departments proceeded to operate accordingly. Interested vice-presidents or department heads were supposed to review their operations and the operations of the domestic plants and sales departments and to prepare summaries of results for Miller.

Joseph Thorp-Manager, Statistical Office. As the expansion program progressed, the four top officers, Hall, Parsons, Walton, and Miller, realized that the intimate and firsthand personal knowledge of operations and people which had been an important element in their control of the company when it operated on a small scale would diminish as the scale of operations expanded. They would be required to substitute less personal methods of control and to rely to a greater extent on summary statistical, cost, and financial data, and formal operating reports in order to follow operations. Also they would have to delegate more authority and responsibility than before to the vice-presidents, department heads, and plant managers. Standards of performance, which were intuitively understood in the small-scale organization consisting of men who had worked together many years, would have to be made more explicit and objective in the future in order that new management personnel from other industries could be absorbed and could become effective.

For the above reasons in 1942 the officers decided to expand a small statistics section in the production department into a statistical office serving all parts of the company. The new office reported to Miller, the administrative vice-president. This department was placed at a high level in the organization for the purpose of conveying to all executives an appreciation of its importance to top management. This department was to render service to all executives and departments and at the same time it was not to be subordinated to the interests of any one department.

The statistical office was to be a fact-finding and fact-analyzing agency capable of supplying executives and supervisors the data needed for better control and forward planning. The manager was told to collect, revise, and consolidate the operating facts originating at the lowest levels of operation into summaries and analyses appropriate for each of the levels of supervision. Like many other such ventures, this office was faced immediately with nonstandard statistics, different definitions and classifications, and some personal opposition, at both high and lower levels of management, to the notion

of standardization, summarization, and comparison of the operating

statistics of separate plants or departments.

Joseph Thorp, the manager of the office, was an aggressive leader who sensed the importance of the contribution of his office to good management throughout the company. He induced the management to establish similar functional offices in each plant and department and he assisted these units in the procurement of qualified personnel. Thorp indoctrinated these executives at plant levels with his philosophy of service to management and urged them to become aggressive leaders in their own organizations. These men were on the staff of department heads or plant managers from whom they received orders and to whom they tried to sell a more effective use of statistics by management.

In Hall's opinion, it was at least a year and a half after the statistical office was established before major resistance to its efforts by executives and supervisors was overcome. The latter, at plant levels, tended to resent "home office" interference in management methods. They did not like to be told what reports to use; they were not sure whether the reports were to help them or to highlight their deficiencies. Both at the home office and in the plants there was an initial resentment by line officers who objected to "being told" by staff officers what facts they should use and how they should interpret these facts in carrying out their own defined responsibilities. Whenever there were explosions on such questions that got as far as Hall, he nearly always supported Thorp and his assistants.

James Harwood—Manager, Planning Department. In carrying out his duties, the administrative vice-president had the assistance of a planning department. During the expansion there had been serious breakdowns in coordination between functional departments such as sales, production, purchasing, finance, and personnel, and schedules of operations were not well enough synchronized. Therefore late in the expansion program the planning department was established to insure that the various aspects of the expansion program were coordinated and properly scheduled and that all departments and plants kept in step in the same sales program. When this program was revised as a result of changes in the orders of the government or industrial customers, this department was expected

to watch the follow-up of these changes in the operating plans of the

company.

This department worked out planning procedures which were widely used throughout the organization to keep the production plans in balance with sales estimates. The personnel of the department were adept at showing other departments and supervisors how to plan the flow of material and personnel, and how to plan the time for manufacturing products and their components to the schedule of deliveries for products. The department had no policy-making or line operating functions and had no counterpart in the domestic sales department or in the plants. It was expected to make continuous studies of the status and progress of company operations in terms of stated plans.

James Harwood, manager of the planning department, had a staff which was expertly trained. They endeavored to cooperate with all home office departments in the solution of their operating and planning problems. The aim of the planning department was to help the organization as a whole to succeed. When the department had an idea for the improvement of an operating method or a planning procedure it submitted the idea to the vice-president or department

concerned.

### **The Current Problem**

### Need to Reorganize

In November, 1945, Mr. Daniel Hall was examining certain preliminary budgets for the year 1946. He was very much dissatisfied with them. They seemed too large, not particularly well founded on realistic operating plans, and were apparently "costed" on fallacious data. He understood that the budgets had been prepared in a hurry following the end of the war with Japan, and that some of the estimates had been developed by inexperienced personnel. This latter condition was the result of the rapid decline of sales in the company, the necessity of layoffs, and the accompanying tendency of skilled workers and executives to leave the firm and go back to the businesses with which they were formerly associated.

Mr. Hall believed the Hutter Company was bound by events to shrink again in size after World War II. Therefore he thought it advisable to formulate longer-run plans and objectives as quickly as possible, to profit from the experience gained on a large scale during the war, and to rebuild the organization to the new lower level of operations in the shortest possible time. In connection with these necessities Mr. Hall prepared a memorandum proposing expansion of the treasurer's office.

### Hall's Memorandum

Mr. Hall's memorandum on expansion of the treasurer's office, was as follows:

As a result of the end of the war with Japan and the cancellation of government contracts we have entered the cycle of sharp contraction, of reduction of expenditures, and of competition of departments or projects for the limited funds and personnel which we can now make available. Our business increased in complexity during the war, and the outlook is for greater complexity in peace. We are requiring a more accurate selectivity of product projects than ever before and a more intense follow-up of the application of limited funds to such projects. In short, we must be sure that every dollar allocated to a capital expenditure goes to the most needed project, and we must get a full dollar's worth as well out of every dollar expended in the current operating program. This requirement calls for the best business management, not only to provide

basic facts for policy decisions but to follow through on such matters.

Sound practice requires the Hutter Company to develop further a plan which can provide organized and completely coordinated operating and capital expenditure budgets. This plan will require an organization which has a thorough knowledge of the facts from a practical, analytical, and not a bookkeeping, angle. We have made much progress during the war in adjusting our business methods to those of a larger-scale organization by adding the statistics office and the planning department. We need further to improve our expense controls and cost accounting procedures, and we should make much more careful analyses of needs than we were able to make during the war period. I believe the solution of this major problem lies in the merger of the office of the treasurer with the two other departments mentioned to form a new unit entitled Office of the Treasurer and Controller to be headed by a vice-president. In my opinion, this new office should report directly to either the president or the executive vice-president.

The general functions of the new office would include the following duties: (a) to organize and unify the operating plans of the various departments and factories into a single master budget program; (b) before submitting that program to the president and the board of directors for approval, to check the phasing of the various parts of the operating budget; (c) to analyze current actual performance against the scheduled standards of performance used in the preparation of the budget; (d) to perform functions similar to a, b, and c for capital expenditures; (e) to make continuous studies in cooperation with departmental and factory agencies with respect to operating standards; (f) after approval by the board of the master budgets, to allocate funds among various activities and supervise the accounting and auditing systems in connection

therewith.

In my opinion the steps outlined above should result in a more orderly development of our budgets and make possible more expert and persuasive presentation to the board of directors. Some saving may be anticipated from the simple combination of such functions.

### Reception of Hall Proposal by Subordinates

Hall was planning an extended trip combining some vacation with visits to certain key plants. Before leaving he had an informal talk with Parsons about his proposal. He gave Parsons the written memorandum because "it gives a succinct statement of my views on an important problem." Parsons told Hall that he was in general agreement with him and suggested that Hall's memorandum be given to Mr. Hugh Walton, executive vice-president, for further review, analysis, and ultimate comment.

Walton's Reaction. Mr. Hugh Walton received Hall's memorandum from Parsons with considerable misgiving. He was not sure what it was intended to convey. He realized that Mr. Parsons, who had not analyzed the matter at all, was favorably disposed to Hall's suggestion. Richard Miller, the administrative vice-president, also thought it was worthy of careful study. Later in the day Mr. Walton was in Mr. Hall's office and Hall asked, "What do you think of my memorandum?" Walton replied, "Your memorandum places too much emphasis on planning and coordination and builds up the position of the proposed new vice-president so much that I can't see why I'm needed in the company any more."

Mr. Hall later explained that he had been amused by this immediate reaction and had suggested that Walton reread the memorandum. There was nothing in the memorandum, said Hall, which was designed in any way to reduce the importance of the president, the executive vice-president, the administrative vice-president, or any of the senior members of top management. Hall explained to Walton that instead of weakening the position of any of the top administrators, the proposal was designed to strengthen their control over the company's operations and to insure that a dollar's worth of value was received for every dollar expended.

Report of Special Committee. Mr. Walton sent copies of Hall's memorandum to the administrative vice-president and to the other

vice-presidents shown on the home office organization chart, and asked for their comments. Each of them expressed a desire to study the matter further and made no additional comments either for or against the project. Thus, the matter came back to Mr. Walton for further action. He appointed a special committee consisting of representatives from the office of each of the vice-presidents and included in addition, representatives of the treasurer's office, the planning department, and the statistics office. After a month's study this group turned in a report which was considered wholly unsatisfactory by Mr. Walton. The group had not made a penetrating analysis of the proposal, and obviously did not want to get into organization politics with which this project apparently was being "tarred." A period of two months had elapsed since Hall made his proposal to Parsons. Both Hall and Parsons were asking Walton what results he had obtained and what his final recommendation was going to be.

Walton felt that he had to reach some kind of conclusion, and therefore he called upon Barton James to write a report on the situation, recommending to what extent, if any, Hall's recommendation should be accepted, and indicating what steps should be taken to make any of James' proposals effective.

### **Study by Barton James**

### Background

Barton James was well known to many of the officers of the Hutter Company. He had been loaned to the Hutter Company during the war to assist it in its expansion program. He had started work in the summer of 1941 and left October 1, 1945. During that time he had brief periods of service with the purchasing and the production departments. He was a close personal friend of the vice-president in charge of sales, was well acquainted both socially and professionally with the treasurer and the manager of the statistics office, and he had had some business contacts with the head of the planning department. He had also worked at one time or another as a special assistant to the administrative vice-president and to the executive vice-president. He was well known to both Hall and Parsons, and his views had always been given consideration by them. Because of his service as special assistant to the administrative vice-president, he had experienced many business relationships with the other vice-

presidents in the home office and knew personally a number of the plant managers as well as the domestic sales manager. None of these officers had ever considered James a rival in the organization because they knew he was on loan from another company. On his retirement the officers had given him a farewell banquet, in which considerable personal regard for him had been expressed.

James hesitated to accept the request of Mr. Walton to write such a report because he knew the organization was in a state of flux and was likely to continue so for another year. He did not wish to take sides in organization arguments, and he was of the opinion that writing reports on this type of problem was not a particularly good use of time; if he were working within the organization, he thought that he could help resolve issues such as stated in Mr. Hall's memorandum, but he had little faith in outside suggestions on inside problems. A number of executives spoke to him about undertaking the assignment, and expressed their confidence in his unbiased judgment. Walton asked the president of James's company to lend him for a short period to the Hutter Company. Reluctantly James accepted the job.

A brief account follows of his conferences prior to the time he sat down to write his report.

# Preliminary Conference with Walton

After accepting the assignment James had a brief conference with Walton to talk about budget planning. Neither wanted to become too specific at this point but they agreed that Hall and Parsons probably would be satisfied with a statement of the process which can be described in a general way as follows:

The vice-president in charge of sales, working with the other functional vice-presidents and with the export sales department and the domestic sales manager, should approve each year an estimate of sales by products. This would be agreed upon first in a merchandising committee, which might include the domestic sales manager, the export sales manager, the purchasing agent, and the manager of the statistics office. Their estimates should be arrived at through studies of general business trends with adjustments for particular geographic conditions and particular industries which affected the company's market. Estimates also should be based on sales by customers or customer classes for the last five years, projecting to these sales the effect of any merchandise changes or additions to lines. The committee's judgment with respect to these two estimates would become the final estimate submitted to the vice-president. After approval or revision of this estimate all master plans were to be based

upon it. A finance committee of the board of directors, working closely with the vice-president in charge of sales, the vice-president in charge of production, the vice-president in charge of purchasing, and the treasurer, might set inventory limits on various types of finished goods and work in process. Efforts should be made to schedule production on as even a basis throughout the year as possible, giving due weight to variation in sales and allowed variation in

inventory limits for various seasons of the year.

The principal job of the enlarged treasurer's department would be to see that the master plan so generally conceived was worked out on a broad basis at the home office level and on a more detailed basis in the departments and plants. Thus, estimated deliveries from production and some corresponding factor for sales departments would become the basis of properly time-phased requirements for personnel, raw materials, purchased parts, and other services required in the sales, production, and office organizations. Presumably the volume flowing through a department would be the basis upon which budgets were determined. To the estimated volumes by time periods, cost factors and purchase prices could be applied to arrive at financial estimates. This process required good planning of flows and presumed the knowledge and use of good operating standards.

James next talked with Clinton Straight, the treasurer, and Robert Bacon, the assistant treasurer.

# Conference with Clinton Straight

Mr. Straight emphasized in his interview that he was planning to retire within a month and was therefore not a candidate for the enlarged position of treasurer and controller with the title of vice-president. He stated that he could not honestly recommend Mr. Bacon, the assistant treasurer, for the vice-presidency but he did feel that Bacon was a worthy successor for the limited functions of the present treasurer's office.

During his period of service with the company he thought he had established a basically sound underlying internal auditing, accounting, and financial organization. He did not believe in prescribing systems for department heads and managers. That is why he had long favored decentralization of control. His internal audit organization checked on the adequacy of the procedures set up by the department and plant managers for safeguarding and recording assets, and on the observance of these procedures and others that the home office had to announce on a company-wide basis. In carrying out the budget functions assigned to his office, he had taken a relatively passive interest. He assumed that the figures presented to him for budget purposes by the managers of plants were based on

sound data for volume requirements and unit cost. It was with this view that Hall apparently expressed disagreement. Nevertheless, Mr. Straight doubted the wisdom of expanding the treasurer's organization by merger because it would upset existing relationships and would, in his opinion, inevitably lead to increasing the control of the home office over the subordinate department heads and plant managers. This possibility he regarded as a mistake, and he was certain, moreover, that the oldtimers who held these positions would vigorously oppose such encroachment on their authority and responsibility. He thought that if Hall's proposal meant that the top management was not satisfied with the domestic sales manager and the domestic plant managers they could solve the problem better by getting new managers than by complicating the control and organization setups.

# Conference with Robert Bacon

In his talks with Mr. Bacon, James found that Bacon also doubted the wisdom of a merger of the three offices, but for entirely different reasons. He felt that the aggressive efforts of the statistics office had caused friction, and joining up with such an office would tend to weaken his own prospective influence within the Hutter Company. He was convinced, however, that there was need for better management on the part of the heads of domestic plants, the domestic sales manager, the various vice-presidents and their supporting staffs. In Bacon's opinion, these men had all the facts they now needed from the three offices separately organized. The problem was to get them to use the facts they had. Too many of the executives, in his opinion, were men of the old school who did not realize that "times" and the scale of company operations had changed. When asked who in the company would take the leadership in improving the capabilities of the executives, he had no answer. He more or less implied that it was the problem of Mr. Miller, the administrative vice-president and Mr. Walton, the executive vice-president. He pointed out without being asked that Miller was quite good in listening to and seeking out facts for reaching company decisions, but that Walton was notorious for making policy and operating decisions on insufficient facts and without adequate consultation with the vicepresidents.

# Conference with Joseph Thorp

When James called upon Joseph Thorp, the manager of the statistics office, he found an enthusiastic supporter of Mr. Hall's proposal. Thorp thought the move should be made at once. He had no desire to be the head man, and he thought it most inadvisable to set up the three offices as separate entities within the new vice-president's office. He wanted to start reorganizing from the bottom, and suggested the possibility of organizing divisions within the new office such as budget planning, budget analysis—comparison of actual expenditures with budget-funds control, statistical analysis, a planning section, and the like. He thought the organization should report to the administrative vice-president instead of to the executive vicepresident. He favored organizing corresponding offices in the domestic sales department, the export department, and the various plants, and he wanted the home office to have complete technical supervision over these offices, their general procedures, and certain standard reports required by the home office. These offices should, he thought, be under the line supervision of the particular plant or department, but personnel would be selected and trained by the home office organization. He believed that merging the three offices and reorganizing the office internally would give the managers at lower levels in the organization, as well as top management, a more lucid picture of the operating results and problems of the company. It would be easier for such a technical organization to cooperate with the methods men in the plants and the office managers of other departments in working out and checking upon standards of performance. The general pattern of tight control from top down to the lower levels of organization, implicit in the views of the head of this department, was in sharp contrast to the views of the treasurer.

# Conference with James Harwood

Mr. James' next interview was with the manager of the planning department, Mr. James Harwood. He concurred in some of the statements made by the treasurer and the assistant treasurer. He felt that there was a great need for better coordination and financial planning, and thought also that it was very necessary to develop better methods both in the factory and in the offices, and to tighten standards of performance. He agreed with Mr. Bacon on the old-

fashioned approach of many of the department heads or plant managers and some of the home office staff. He had grave doubts whether any improvement could be made, but thought the plan was worth a trial. He realized that he had no chance of becoming the new vice-president in charge of the office of treasurer and controller. He urged James to point out in his report the importance of the right kind of person for that position. He had in mind one of the abler managers of one of the domestic plants, Mr. Stanley Poole.

Harwood made a strong argument for the suitability of Stanley Poole. Poole had served in the sales department as a young man and had served in the export department in Asia. At one point he had been an assistant to the vice-president in charge of sales in the home office and at present he was manager of one of the larger domestic plants. Harwood admitted that Poole might not regard as a promotion the change from the line control of a plant to a staff position in top management. However, Poole was considered very loyal to the organization. Moreover, he prepared excellent plans for operations and usually submitted good budgets as well. He had a broad conception of policy matters, and he knew how to dig into detail when that sort of work was required. He was also a man with whom Harwood would like to work. James thought that Harwood meant by this statement that he would like to be the principal assistant to Mr. Poole in case Poole were made vice-president.

#### Conference with Richard Miller

Mr. James next interviewed Richard Miller, administrative vice-president. He had had so much trouble during the readjustment period getting coordinated plans from his vice-presidents, department heads, and plant managers, that he was automatically for the proposal and felt that it would assist him greatly in carrying out his responsibility. He suggested that the job of top management was simply too great for the four men now charged with it and they needed the expert assistance of the enlarged office of treasurer and controller. He suggested the possibility that the general collection of reports and facts from subordinate plants or departments might be accomplished without merger by the statistics office, now under his control, and that the analytical functions of that office might be combined with those of the planning department and the treasurer's office to form the new organization. He urged that the new office

1000

report directly to the executive vice-president and not to him. He believed that an assignment of the enlarged office to the executive vice-president would increase its importance in the home office, in the minds of managers of the domestic plants, and of the domestic sales manager.

#### Other Conferences

James also talked to the vice-president in charge of sales and the vice-president in charge of production. These interviews produced nothing with which he was not already familiar from his previous contacts with the company, and served only to confirm his opinion that so long as the treasurer and controller functions were conducted in a manner to assist vice-presidents and the plant and department managers in the operation of the business, any plan would be acceptable. However, if the proposed plan was designed to tighten controls on these officers and to lead to any diminution in their authority or policy-making responsibility, they were likely to be against it.

The vice-president in charge of production suggested that the size of the proposed organization might be reduced if the treasurer's general functions were not included in the enlarged office. He proposed, as an alternative, taking the budget and accounting functions out of the treasurer's office and setting them up in a separate controller's office. Under his plan the treasurer would not report to the president and the executive vice-president but would be on a par with the other vice-presidents reporting to the administrative vicepresident. The treasurer's activities would consist largely of responsibility for funds and investments. It seemed to be a matter of indifference to the production vice-president whether the proposed controller's department should report directly to the executive vicepresident or to the administrative vice-president, which would place him on a par with the other vice-presidents. Under this plan of the production vice-president, the controller would be the principal advisor or assistant on control matters to top management and would have the responsibility for the coordinated preparation of budgets throughout the company. The controller would be in charge of the development of standardized systems of accounts, budgetary procedures, uniform statistics, cost accounts, and the like. By prescribing the minimum essentials for accounting and statistical systems and

procedures he would provide the basis for uniform records on which analyses, comparisons between plants, and summarization of results

depended.

The vice-president in charge of sales raised a question in his interview regarding the advisability of making too drastic a change in existing organization during a period when outside events beyond the control of the company were themselves far-reaching in character and upsetting as well.

From other talks with more than one vice-president, James learned that the company was pretty well organized as it was, and that with the reduced pressure on executives as a result of the end of the war, there should be opportunity for better coordination of activities and for better planning, budgeting, and setting of standards. In their opinions the recognition of the need for information for making decisions and the willingness to use it were probably as essential as any changes in organization. They pointed out, without prompting from anyone, that both the president and particularly the executive vice-president were sometimes remiss in not using the facts that were available. They could see some slight margin of advantage in favor of the modification of Mr. Hall's proposal suggested by the production vice-president because of the complete unification under the controller of the budget, comparison, and coordination functions. Nevertheless they seriously doubted the wisdom of establishing the proposed office unless the president and executive vice-president were willing to do two things: (1) assign competent personnel to the office, and (2) be informed regularly by it of the progress of the company and of any problems revealed by analyses of operations. They stated that James's report would be genuinely incomplete if he failed to discuss this matter. They argued, further, that James was risking his reputation if he failed to point out the extent to which the two considerations mentioned above affected the ultimate success of Mr. Hall's proposal or any modification thereof.

#### Tentative Conclusions

After completing these interviews and before writing his report James came away feeling that he had a choice among the following possibilities: (1) maintenance of the status quo; (2) complete endorsement of Hall's proposal; (3) some modification of Hall's proposal in accordance with suggestions made by different officers; or, (4) presentation of an entirely new plan. In view of the time when his initial report was due and the complicated political situation

within the organization, he ruled out the fourth possibility.

James considered carefully not only the conclusions to be drawn but also the manner of presenting them to Walton because he sincerely wanted to be helpful and felt that his problem was to decide what to say now that would make the most effective contribution to the long-run results desired by Hall and others. He planned to prepare a short report which he would discuss orally when he delivered it. At that time he might have an opportunity to discuss more points than could be put into a brief document. He intended to leave this short report with Walton and wanted it to contain those points which above all others he desired Walton to remember. He also believed that he should have ready a longer report, going into greater detail, to support the short report.

James wondered whether he ought to bring out in the short report either of the following points: (1) the problem which top management faced in making able executives and supervisors still more effective by indoctrinating them in the use of a modern control philosophy; (2) the type of man required to do the job and the attitude he should take toward it and the other executives concerned.

What, in your opinion, prompted Mr. Hall to issue the memorandum proposing expansion of the treasurer's office?

What should Mr. James do now?

#### ARGOSY CHEMICAL CO.

Placing the Budget Function in the Organization

This case involves a reorganization of the controller function by a newly appointed chief operating executive. More specifically, it is concerned with the establishment of a new office at the vice-president level, a primary duty of which was to be the direction and administration of the budgeting operation.

"Another new vice-president—this time in charge of planning and control," groaned the manager of the industrial chemicals division of Argosy Chemical Co.

"From the way I read his proposed duties and responsibilities, it sounds like the old jcb of Budget Director now promoted to the job of unofficial executive vice-president," said the vice-president of commercial sales.

"What I can't figure out is what the controller's office is now supposed to do," was the controller's comment.

"I thought the chief value of budgeting was not the budget itself but the examination of operating plans required in preparing a budget," came from an interested operating official.

These comments were a few of the many being made about some organizational changes proposed for the Argosy Chemical Co.

The Argosy Chemical Co. was a large chemical company engaged in the manufacture and sale of over two thousand chemical compounds ranging from bulk chemicals to consumer products sold in drugstores and hardware stores. Sales in 1954 totaled \$148,000,000, and profits after taxes were \$2,900,000. The company had fifteen plants in seven states with executive offices in Chicago, Illinois. There were five operating divisions, each headed by a vice-president reporting to the president. The president's office in Chicago had the following "staff" officers: vice-presidents of sales, manufacturing, industrial relations, legal affairs, and a treasurer and controller.

During the latter part of 1954 the new president of Argosy,

Norman Bruton, undertook some organizational changes. Mr. Bruton was a graduate of a midwestern university and a graduate business school and had moved in as president with the principal directive of

improving the profit showing of the company.

One of the changes proposed by Mr. Bruton was the creation of the office of vice-president of planning and organization. One of the major duties of this office would be the direction and administration of the budget. The president strongly believed that a centralized effective budget procedure was one of the management tools for building a profit, and hence should be a responsibility of a top officer reporting directly to the president.

Mr. Bruton was aware that there was some question as to the wisdom of moving the budget function from the controller's office to a new and important position in the office of vice-president of planning and organization. He was contemplating what course he should take to gain acceptance of his proposed move.

In thinking about this problem he made available to the case writer a series of comments which had been made about the budget and its place in the organization.

Some of these notes and comments were:

1. The head of the budget department should report to:

a) Controller?

b) Treasurer?

c) President?

d) Makes no difference?

2. However you word it, can an officer responsible for planning and the budget be only a staff officer giving advice, not orders?

3. What is a budget for?

a) Is it a plan of operation reduced to the common denomination of dollars?

b) Is it a way of measuring efficient performance?

4. Do you have to have effective cost systems to have a budget?

5. Who has final say on a departmental or divisional budget—the head of the department or division or the budget director?

6. If the department or division manager has the final say over the budget, then is the job of the director of the budget one of scorekeeping? If so,

isn't this the controller's job?

7. Could all the confusion over the change be avoided and everybody satisfied merely by dropping the use of the word budget and substituting the word planning? After all, every good company has to plan.

In light of these comments, as Mr. Bruton, what would you do?

# case 3

# THE BEARDSLEY CHEMICAL COMPANY

# Decentralization of Accounts Receivable

In this case, the sales department requested a change in billing and accounts receivable procedures, which was refused by the accounting department. The issue of who decides accounting procedures, and on what criteria, is raised.

#### Introduction

The Beardsley Chemical Company manufactured chemicals used in industry and patented household chemicals sold through hardware, variety, and department stores. Approximately 200 products were sold by the company. Its manufacturing plants were on the outskirts of Toledo, Ohio. Sales were channeled through division sales offices in the following cities, each division serving a surrounding sales area:

Cleveland St. Louis Chicago New York Boston Atlanta Dallas Denver San Francisco

Seattle

#### Present Account Receivable Procedure

In 1945, the company centralized the account receivable recording, statement, and collection procedure, primarily in order to utilize fully a modern accounting machine installation.

Under this procedure, orders for each sale were prepared in the division office on an IBM electric typewriter. Each invoice was numbered, and prepared in six copies. The original was sent to the customer, the other copies distributed as follows:

- 2 copies to the warehouse or the factory for shipping purposes
- 1 copy remains at the division office
- 2 copies to the home office

In the home office one copy was held awaiting notice of shipment. This copy was matched with a copy sent by the factory or warehouse showing date of shipment on it. The other home office copy was priced, extended, and federal excise taxes added, if applicable. This copy then went to the tabulating department, which recorded the following information on tabulating cards:

- 1. Customer
- 2. Date of order
- 3. Division office
- 4. Salesman
- 5. Product
- 6. Volume (cans, pounds, gallons, etc.)
- 7. Dollars
- 8. Excise tax, if any

The tabulating cards then became the source of invoice billings, statements, accounts receivable ledgers, and various sales statistics.

Customers were advised to remit collections to the home office.

The company operated on a cycle billing procedure, so that severe month-end bottlenecks in accounting would be avoided. Each division, therefore, had a separate billing cycle in the home office routine.

#### EXHIBIT 1

#### Statistics on Accounts Receivable

1	Number of active accounts	60,000
1.	Number of active accounts	60,000
2.	Total accounts having purchased within one year	110,000
	Average number of invoices per month	85,000
4.	Average billing per month	\$24,000,000
5.	Total machine rental plus cost of supplies per year	\$115,000
6.	Total number of home office employees dealing full time on accounts	
	receivable	215

The company credit policies placed limits on credit extension based on size of account and unpaid balances in an account. This procedure was applied at the division level at the time orders were written. In order to supply the division office with the necessary credit information and other information relating to customers' accounts, a "history card" was used, showing customer's name, address, credit information, monthly billings, and collections. Each month

before its particular billing time, each division sent its history cards to the home office, who prepared and mailed statements with copies of invoices attached, and posted the cards. After the particular billing cycle was completed, the history cards were returned to the division office.

After the end of the month, various statistical reports were prepared and distributed. These reports were related to sales by volume, division, product, and salesman and were distributed—some to the division office and salesman, and others to the home office management.

# Criticism of Present Procedure and Request for Change

In 1957, the sales department requested the accounting department to revise the present system in order to permit billing and statement preparation to be made at the division office. Reasons for this request were listed as follows:

- 1. A great deal of customer good will was being lost through errors in billing or statement preparation—errors such as billing the wrong customer, improper credits, or improper inclusion of federal excise taxes. The sales department suggested that, since the division offices had contact with the customers and knew them, many errors could be caught or easily corrected. The sales department pointed out that the company had 344 customers by the name of Smith; 14 were listed as R. A. Smith.
- 2. Statistics which the division office and salesmen needed on the preceding month's business were slow in coming from the home office. Due to the pressure of other necessary monthend work, sales reports were going to division offices from the 15th to the 25th of the following month. As a result of this delay, many divisions were trying to keep their own statistics, thus duplicating the work of the home office.
- 3. The absence of history cards from the division office for about two weeks each month resulted in customer ill will. Customers would call in to learn their current balance and the division office could not advise them. This was particularly troublesome to customers who had been denied further credit because of a past due balance.

#### **Review of Procedure**

The controller assigned his chief accountant to review the sales department request. The chief accountant, after review, estimated that an additional cost of over \$60,000 per year would be involved if the decentralized plan were adopted. His estimate of additional cost is summarized as follows:

Supervisors of accounts receivable and tabulating	
installations—1 per division at \$5,000 per year	
average	\$50,000
Additional machine rentals	10,000
Total	\$60,000

The added rentals would be incurred, according to the chief accountant, because the large centralized accounting unit could not be reduced proportionately, as it was also used on manufacturing costs, payrolls, and other accounting work. One of the other jobs was the listing and preparation of dividend checks for 12,400 stockholders. In this connection the chief accountant expressed concern over possible problems of the line and staff responsibility of accounting personnel in division sales offices.

Other costs which the chief accountant mentioned but did not calculate were increased internal audit costs if work were done in the division.

Another disadvantage mentioned by the chief accountant was that the company sold to large industrial users who had plants in several division sales areas. It was pointed out that such companies wanted only one statement from Beardsley, and if there were divisional decentralization the companies might get three or four statements each month.

Again, it was suggested that with divisional preparation of statistical reports it would be difficult to get accurate reports for consolidation at the home office.

#### Conference on the Issue

At a joint meeting of sales and accounting personnel, a staff assistant to the vice-president of sales took issue with the chief accountant's calculations. The staff assistant reported that if a serious

methods study were made he believed the work could be done as cheaply in the division office. The preparation of statistical reports by division office personnel would be eliminated as a duplicate function, thus saving some money. Further, the staff assistant commented that if the company accounting system was so inflexible that one change disrupted the whole system, then the whole system should be reviewed. The conference broke up without a decision being reached, each party promising to look further into the problem.

If you were the controller how would you tackle this problem?

# case 4

# STRATFORD FOODS, INCORPORATED (I)

Organization of the Accounting Function

This case concerns itself with the problem of centralization vs. decentralization of the accounting function in a company moving toward centralization of management.

#### Introduction

Stratford Foods, a large producer and distributor of nationally advertised food products had sales, in 1955, over \$300,000,000; assets topped \$100,000,000. Stratford had plants in 10 states, and sales offices in important cities all over the world. The company was organized on a divisional basis, with line responsibility residing in division heads. Functional coordination was the responsibility of staff men at the home office in New York City. A portion of the former organization chart of the company showing line and staff responsibilities is shown in Exhibit 2. An organization chart of the controller's department is shown in Exhibit 1.

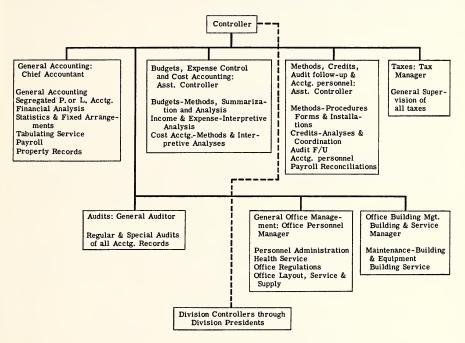
# History

Stratford Foods, Inc., was formed from the consolidation and merger of about 13 individual food companies. The period of consolidation and merger started in 1933 and continued through 1935. As companies were acquired, the growth of Stratford Foods, Inc., was so rapid that for many years each company continued to operate with the same personnel and policies as before acquisition. Several of the heads of companies acquired were men of strong will and could not have accustomed themselves to substantial directions from an executive office of the parent company.

During the latter part of the 1930's and through the 1940's, staff organizations for each major function grew up in the General Offices in New York. Vice-presidents of manufacturing, sales, and research, operating as staff advisors in their particular function, became increasingly important as a part of the management picture. In the

late 1930's the separate corporations were dissolved and merged because of tax reasons existing at that time. The parent company controller's office assumed more responsibilities during this period. First the internal audit function, then budgets and methods developed as a part of the controller's department.

**EXHIBIT 1**Organization of the Controller's Department



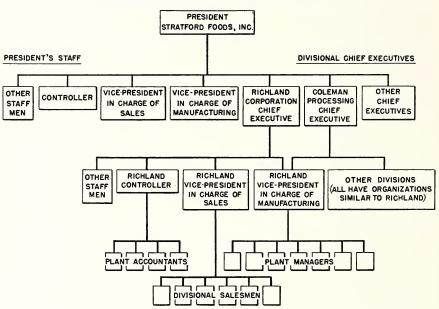
# **Moves Toward Centralization of Operating Management**

During the early 1950's there was a major move toward centralized control of operating functions, eliminating the office of divisional president, and divisional sales and manufacturing staffs. Divisional sales offices were retained, and manufacturing staffs were assigned to specific plants or moved to the General Office manufacturing staff. Final steps in this centralization move were taken in the fall of 1950 with the elimination of the divisional management offices of the South Central division.

Several factors were responsible for the centralization moves.

First, the heads of subsidiary companies who had continued to manage these companies after acquisition were reaching retirement. Second, the company had begun a plan of standardizing products and placing products on a national distribution scale. Interplant or interdivision sales became common, involving problems of profit responsibility, billing procedures, and the like. Third, national distribution of several products required centralized control of advertising, price, and promotion plans. Fourth, it was believed that considerable economy could be achieved in centralized management.

**EXHIBIT 2**Organization of Stratford Foods, Incorporated



# **Accounting Problems Relating to Centralization**

In the latter half of 1956, the controller had come to the opinion that a serious study should be made of centralization of accounting work. Almost all accounting work, with the exception of consolidation, internal audit, budgets, and methods work, was done at the division level.

In September, 1956, the controller requested his methods depart-

ment to make a study of the advisability of centralizing accounting work. In his letter to the methods department the controller said in part:

The accounting department realizes its place in the organization. It considers itself a staff and a service organ. It believes that its job is to follow management, wherever it goes, and provide the best accounting material under those circumstances. It realizes that the organization will not fit itself around the accounting procedures—that the procedures are means, not ends. The executives must think along the lines of "what management wants," not "what management should want." The centralization changes in accounting, if any, must follow, not lead, management.

The policy to be followed by the accounting department in making any change is that no already existing procedure will be changed unless there is a

good reason for it.

In January, 1957, the methods department made its report to the controller. A portion of this report is shown in Exhibit 3. A summarized organization chart under the proposed plan is shown as Exhibit 4.

Analyze the proposed change and summarize your reaction to the plan, giving reasons.

What kind of profit and loss information would you plan to offer the vice-presidents of sales and manufacturing and the president?

#### **EXHIBIT 3**

# Report on Partial Accounting Consolidation for Centralized Group

# I. Purpose and Nature of Study

A study has been made of the extent and desirability of consolidating accounting, statistical, and credit functions of the centralized group should the necessity for computing profit or loss by divisions be eliminated, substituting therefor a statistical merchandising profit or loss by area offices. The divisions included in this centralized group are the Eastern, Central, Southeastern, South Central.

The major purposes of the study were as follows:

1. To develop in tentative form a general plan under which the accounting and related functions would be accomplished,

2. To determine the additional costs or savings in operating the plan

developed, and

3. To consider the manner in which various operational functions would be served by the Controller's organization under the plan, as compared to the present divisional basis of accounting.

#### II. The General Plan

The first step in the study was to develop a tentative general plan for partial accounting consolidation of the centralized group, which is referred to in the remainder of this report as the "General Plan."

# A. Certain Major Features of General Plan

A few of the major features of the General Plan which are of special interest are summarized below:

 One general ledger is provided to contain the transactions now entered in the ledgers for the four divisions in the centralized group, and the General Office. The classification of accounts in the consolidated ledger will permit determination of profit or loss by activities, but not by geographical areas. The latter calculations

would be accomplished statistically.

2. Customer receivables would be maintained in area or branch offices. Employee receivables for plant employees would be kept in the General Office, but for area and branch employees at the area office, except thrift accounts which would all be centralized in New York. Construction ledgers would be centralized. Motor vehicle records (both asset and cost) would be a responsibility of the area office.

3. The monthly closing and statistical analysis for the centralized

group would be handled in the General Office.

4. All reports or records originating in branch offices would clear through the area offices for audit and review before forwarding to the General Office for incorporating in the journals or other records. All accounting controls over plant operations previously performed in the divisional offices would be accomplished in the General Office.

All journals (except for claims and purchased merchandise) and all expense ledgers would be kept on IBM tabulating equipment at

New York.

6. All Monthly Budget Reports would be prepared in New York. Expense analysis for plant expenditures would be the responsibility of the General Office Budget Department, but analyses for area selling and administrative expenses would be continued in the area office. To this end, supporting papers to plant expenditures would be forwarded to New York, but for area expenses the papers would be retained or accumulated in the area office.

7. Each plant would prepare each day a separate delivery report for each area into which shipments are made. After audit in the area office, this delivery report becomes the control over delivery statistics, which are kept in the area office. Production statistics would be accumulated only in the General Office, and all sales

statistics would also be kept in New York.

8. Salary personnel records for all persons in the centralized group would be kept in the Payroll Department in the General Office.

9. Each area sales office would enter all sales made by it on its daily sales report.

- Official cost cards for raw materials would be prepared in the General Office.
- 11. Credits would be an area responsibility, with the area credit committee composed of the area office manager, area credit manager, and the area sales manager for the activity concerned in each case. General supervision of credits would be a duty of the Office Administrator.

# B. Organization of the Controller's Department Under the General Plan

At the time that certain accounting responsibilities for the Southeastern Division were transferred to the General Office, a decision was made that the staff members of the Controller's organization would be assigned operating functions as an additional duty. Instructions would flow directly from the staff members to the area and plant office managers. However, the supervision of the outlying offices in respect to efficient operation, work scheduling, proper staffing, internal control, audit follow-up, and salaries would be assigned to one man who had no other duties.

# C. Major Difficulties in General Plan

The features of the General Plan which seem to present the major difficulties on the basis of discussion of the plan with the various staff members are as follows:

- 1. Probably the point which gives most concern is the peak load created in the General Office, particularly in the Accounting and Tabulating Departments. The peak load problem in the General Office Accounting Department will be somewhat more acute than in a divisional office, since a higher percentage of the employees are involved in closing work. Although the planning in the Tabulating Department will have to be done most carefully, the peak load on tabulating in the Central Division is probably no more difficult to handle than will be the case in the General Office.
- 2. The assigning of the duty of expense analysis on selling expenses and area administrative expenses to the area office, while plant expenditures are analyzed in the General Office, causes concern in several respects. First, the retaining of cash disbursements supporting papers in a location (the area office) other than where the cash disbursements journal is kept is not entirely sound in principle and will cause some difficulty in General Office audits. Second, the keeping of the expense ledgers and preparation of Monthly Budget Reports in a location (General Office) other than the office having expense analysis responsibility should be avoided if possible.
- 3. The desirability of clearing all branch sales office reports (as delivery reports, branch vouchers, and deposit reports) through the area office, which is the control point for branch accounting, for review and audit before incorporating these reports into the general records will cause some additional delay over present practices.

#### III. Cost Considerations Under General Plan

In determining the cost of handling the accounting and statistical work under the General Plan as compared to present costs, it was assumed that no changes would be made except the following: (1) interdivisional transactions between the centralized group would be eliminated, (2) one closing and statistical analysis of results would be made for the entire group, and (3) tabulating equipment at the General Office would be used for all journals, expense ledgers, and sales statistics. Additional savings will probably be more feasible under the General Plan, than under the present divisional basis, as discussed briefly later, but since these further economies will require much more study and planning, they could not be considered in this report.

#### A. Major Cost Factors

The major cost factors in adopting the General Plan are estimated to be as follows:

	Estimated Annual Savings	Estimated Additional Annual Cost
1. Recurring Items:		
a. Reduction in clerical personnel b. Additional rental of tabulating equipment c. Additional telephone, telegraph, and mailing expense d. Additional traveling expense Totals Less additional cost Net Annual Savings	\$32,000 \$32,000 8,300 \$23,700	\$3,500 2,400 2,400 \$8,300
2. Nonrecurring Additional Expenses:		
a. Moving expense b. Termination pay Total Nonrecurring Expenses	$\begin{array}{r} \$26,000 \\ \underline{2,800} \\ \hline \$28,800 \end{array}$	

#### B. Comments on Above Factors

#### 1. Reduction in Clerical Personnel

There would be a decrease of 56 persons in divisional offices offset by an increase of 44 persons in the General Office, a net decrease of 12 employees. At \$2,500 per employee plus 6% for payroll taxes and retirement benefit expense, the saving for this reduction is about \$32,000 annually.

It is believed that the estimate of personnel requirements has been made conservatively and the decrease shown represents a minimum reduction.

# 2. Additional Rental of Tabulating Equipment

The probable changes in tabulating rentals resulting from adoption of the General Plan are shown separately and will be furnished on request.

# 3. Additional Telephone, Telegraph, and Mailing Expense

Because of the necessity for wiring or telephoning over longer distances in many cases (especially for the Southeastern and Southwestern areas), and because there will be considerable additional mailing of records (especially from area offices to the General Office), it is estimated that expenses will be increased by about \$200 per month.

# 4. Additional Traveling Expense

The Office Administrator and his assistant will be required to make frequent trips to plant and area offices. This cost will be partly offset by decreased traveling by present divisional accounting executives and by the General Office auditing staff.

# 5. Moving Expense

It is believed that about 26 persons would be transferred if the General Plan were adopted. It is estimated that about \$1,000 per employee would be required for moving expenses. (Nine of the persons listed to be transferred are single and in one case the employee's family is already located in New York.)

# 6. Termination Pay

A total of 24 persons would be terminated under the tentative plans. Probably normal turnover would take care of about ten of this number, leaving 14 to whom termination pay would be paid. Most of these persons would undoubtedly be those that have been with the company for only a year or two, so it is not believed that termination pay would exceed \$200 per employee.

# C. Additional Possibilities for Savings

In my opinion there are potential savings which can be eventually realized under the General Plan which give promise of being considerably greater than \$24,000 per year, as shown above. Since the ex-

tent of these additional savings is impossible to estimate now with any degree of accuracy and since some of them might be realized even under the present divisional organization, but with more difficulty, no dollar value can be placed on them. The major possible areas of additional savings which I have in mind are as follows:

 The General Plan should eventually result in reduction in cost of accounting supervision. This may not be evident at first because of the necessity of placing men where they best fit into the new organization, with only secondary consideration to salaries. Some reduction in costs should develop in the future, however, with the elimination of Division Controller positions and, in the larger divisions, the Chief Accountant positions, without creating corresponding positions in the General Office.

2. It may be possible to reduce office space requirements in some area

locations as leases are renewed.

The adoption of the General Plan will open new possibilities for Methods work, which has been or would be difficult to accom-

plish under the divisional basis.

4. Ît is believed that the clerical performance reports prepared will become more useful and will result in more aggressive action in reducing expense in below-standard offices. At present, when a division is told that its performance is not as good as other divisions, the meaning of the statement is lessened because the division to whom the comment is directed to is not acquainted with the offices to which comparison is being made. With a large group of mill and area offices under the one Office Administrator, comparisons become more significant and are more likely to result in corrective measures.

5. With peak loads (both monthly and annually) in the area offices considerably reduced, these offices can be operated more closely to minimum requirements, which might lead to economies.

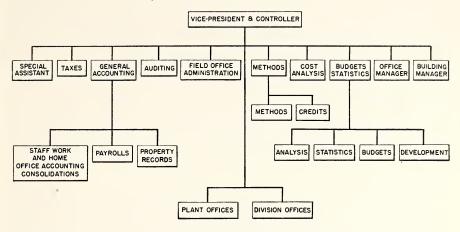
6. Possibly steps can be taken to purchase office supplies more economically.

# IV. Accounting and Statistical Service to Operators

There is one general point in connection with service to operating executives which is believed to be of considerable significance—namely, that adoption of the General Plan will provide uniform approach in gathering accounting and statistical data. It gives assurance to management that comparisons between plants, areas, or other units are valid, and gives added confidence to the Controller's organization in interpreting the data for operators. Uniformity in this respect, which is either assured automatically under the General Plan or can be readily obtained, has been difficult to obtain with our accounting and statistics on a completely decentralized basis. Under the centralized functional management, where decisions are made in New York for the entire group (rather than on a divisional basis), uniform approach and recording seems extremely desirable, if not essential.

**EXHIBIT 4** 

# Proposed Controller's Organization



#### BEECROFT MANUFACTURING COMPANY

The Formulation of Accounting Statements and Their Use by Senior Executives

This case raises the issue of what responsibility the controller has, to make data on operations available to directors on his own volition. It also poses the issue of whether secrecy of operating results is a good management policy.

# **Operations**

The Beecroft Manufacturing Company was engaged in manufacturing metal specialties, and its plants and general offices were located in Van Wert, Ohio. Its operations were in the two following principal lines:

Refrigerator and Stove Hardware and Parts. These parts were sold directly to the refrigerator or stove manufacturer and consisted of small stampings and die castings which were either painted or electroplated, or both. All products in this line were manufactured in Plant A,/except for a small amount of interplant transfers.

Company Line. The principal product of the company line was a small, inexpensive electric broiler sold to jobbers, manufacturers' agents, and chain and hardware stores. This product was an assembly of stampings and purchased electrical parts, and was manufactured in Plant *B* across the street from Plant *A*. The product was patented by Beecroft Manufacturing Company.

#### Personnel

The active direction of the corporation was vested in an executive committee consisting of the president, treasurer, and controller. The executive committee met at least once a week and oftener if occasion demanded. The principal operating officials of the corporation were the president, treasurer, controller, general sales manager, and production manager. The vice-president and secretary were not active in the daily plant operations. The president, although familiar with

all the functions of the business, devoted his time principally to product manufacture and patent and development work.

The general sales manager had direction of all sales activities of the company. He had a wide and respected reputation in the light manufacturing field and was conversant with the technical features of product design and manufacture. His training and experience, however, had furnished him with little background in cost or financial accounting. Although the sale of refrigerator and stove hardware and parts was highly competitive, the general sales manager had been able to obtain a large share of this type of business. He felt that, although the prices obtained for these products were not under those of competitors, the reputation of the corporation, as to the quality of its product and service, presented a prospect for everincreasing volume and profits.

The controller was responsible for all records of the corporation and for the preparation of all accounting reports and statements. Each month the statements set forth in Exhibits 1–6 were prepared under his direction. The corporation operated under a modified standard cost system integrated with the general records. Detailed standard manufacturing costs were available on every product manufactured, together with budget schedules showing variances from standard costs by departments and items of cost.

The production manager was in direct charge of all manufacturing operations in both plants and was responsible for direction of cost control in the plants.

# Organization

The Beecroft Manufacturing Company was organized under the laws of the State of Ohio, and all of its common voting stock was held by a family group of six stockholders. The president, vice-president, and secretary were principal stockholders and members of the board of directors. The remaining members of the board of directors were another stockholder and an officer of the Commercial National Bank of Detroit.

During the years following the Korean conflict, the corporation had made much needed improvements in its plant. This capital requirement, together with need for funds to finance inventories and accounts receivable, caused the corporation to seek loans from the Commercial National Bank of Detroit. As a result of this procedure, the officer of the Commercial National Bank of Detroit in charge of the corporation account had been placed on the board of directors.

#### General

The vice-president of the corporation was a strong believer in the restriction of all financial information to the stockholder group. His attitude was that it was not only unnecessary but dangerous to disclose any information as to profits, net worth, cash position, etc., to other than stockholders; and his attitude was expressed to the controller as follows: "We live in a small town, and, if our employees learn our profits or our net worth, the information will spread all over town and be distorted. Never let our operating officials or our workers learn what we are earning. It will cause trouble."

This attitude caused the controller considerable embarrassment when talking to operating officials. Because of the size of the corporation, all of its operating officials were on very close terms and discussed many of the problems of the business freely. It was not uncommon for the controller to be asked by the production manager, or the general sales manager, "How did we make out last month? Did we show pretty good profits?"

The statements showing the relative profitability of the two plants had been made available to members of the executive committee and to the vice-president but not to other directors or operating officials. The other directors and the bank were furnished with copies of Exhibits 1 and 2.

What action should the controller take under these circumstances?

**EXHIBIT 1**Balance Sheets—March 31, 1957, and February 28, 1957

	March	31, 1957	February	28, 1957
Assets				
Current: Cash on Hand and in Bank Marketable Securities Accounts Receivable Trade—Net		\$ 74,763 17,163 514,123		\$ 69,327 17,163 468,977
Inventories: Raw Material Work in Process Finished Goods Stores Prepaid Expenses Total Current	\$202,604 152,167 41,172 115,621	$511,564$ $5,163$ $\overline{\$1,122,776}$	\$197,604 125,334 37,626 114,137	474,701 5,327 \$1,035,495
Fixed: Land Buildings Machinery and Equipment Delivery Equipment	\$ 32,174 246,927 460,573 8,273 \$747,947		\$ 32,174 246,927 458,429 8,273 \$745,803	
Less Reserves for Depreciation	196,448	551,449	193,108	552,695
Patents Less Amortization Total Assets		18,726 \$1,693,001		$\frac{18,986}{\$1,607,176}$
Liabilities and Net Worth				
Current: Notes Payable—Commercial National Bank of Detroit Accounts Payable Accrued Taxes Accrued Wages Accrued Commissions Total Current		\$ 200,000 163,764 82,173 16,122 3,423 \$ 465,482		\$ 150,000 159,899 84,864 9,766 2,603 \$ 407,132
Fixed: Notes Payable—Commercial National Bank of Detroit, Due November 1, 1960		150,000		150,000
Net Worth: Capital Stock, 80,000 shares—Common Stock \$10 Par Value, Issued and Outstanding Earned Surplus	\$800,000 277,519	\$1,077,519 \$1,693,001	\$800,000 250,044	\$1,050,044 \$1,607,176

EXHIBIT 2
Profit and Loss Account—March, 1957

	March, 1957	February, 1957	Increase Decrease *
Gross Sales	\$503,387	\$463,867	\$39,520
Less Returns and Allowances	4,364	4,471	107*
Net Sales	\$499,023	\$459,396	\$39,627
Cost of Sales: Material Labor—Direct Factory Overhead	220,382 87,941 121,291	203,069 79,930 111,862	17,313 8,011 9,429
Gross Profit	\$429,614	\$394,861	\$34,753
Commercial and Administrative Expense Operating Profit Other Income—Net Net Profit—Before Federal Income Taxes	\$ 69,409 27,198 \$ 42,211 	\$ 64,535 25,084 \$ 39,451 1,673	\$ 4,874
Provision for Federal Income Taxes	\$ 43,957	\$ 41,124	\$ 2,851 900
	16,500	15,600	
Net Profit to Surplus	\$ 27,475	\$ 25,524	\$ 1,951
% to Net Sales	5.5%	5.6%	

**EXHIBIT 3**Profit and Loss Account, by Plants March, 1957, and February, 1957

	Plan	nt A	Pla	nt B	To	otal
	Mar. 1957	Feb.~1957	Mar. 1957	Feb.~1957	Mar. 1957	Feb.~1957
Net Sales	\$325,462	\$297,963	\$173,561	\$161,433	\$499,023	\$459,396
Cost of Sales: Material Labor Factory Over-	\$156,222 63,643	\$144,008 57,166	\$ 64,160 24,298	\$ 59,061 22,764	\$220,382 87,941	\$203,069 79,930
head	$\frac{98,127}{\$317,992}$	$\frac{89,741}{\$290,915}$	$\frac{23,164}{\$111,622}$	$\frac{22,121}{\$103,946}$	121,291 \$429,614	$\frac{111,862}{\$394,861}$
Gross Profit Commercial and Administra-	\$ 7,470	\$ 7,048	\$ 61,939	\$ 57,487	\$ 69,409	\$ 64,535
tive Expense Operating	17,775	<u>16,121</u>	9,423	8,963	27,198	25,084
Profit	\$ 10,305*	\$ 9,073*	\$ 52,516	\$ 48,524	\$ 42,211	\$ 39,451
% to Net Sales	3.2%*	3%*	30.3%	30.1%	5.5%	5.6%

<sup>\*</sup> Red.

EXHIBIT 4

Factory Overhead-March, 1957

		I	March, 1957			F	February, 1957	
Item	Plants A	nts B	Nonallocable	Total	Pla A	Plants B	Nonallocable	Total
Supplies	\$30,164	\$ 3,342	\$ 676	\$ 34,182	\$24,622	\$ 2,846	\$ 524	\$ 27,992
Indirect Labor	44,213	7,980	11,673	63,866	41,235	7,963	11,469	60,667
Supervision—Departmental	2,160	1,400	ı	3,560	2,160	1,400	ı	3,560
Supervision—General Factory	1	1	2,750	2,750	ı	1	2,750	2,750
Tool and Die Expense	875	1,473	1	2,348	1,437	926	ı	2,413
Light and Power	1,562	864	1	2,426	1,496	813	ı	2,308
Water	430	160	1	290	416	151	ı	267
Coal	1,080	672	1	1,752	1,312	742	ı	2,054
Liability Insurance	1,163	862	1	2,025	1,116	837	ı	1,953
Social Security Taxes	1,956	678	1	2,634	1,906	614	1	2,520
Freight	. 1	1	864	864	1	ı	774	774
Insurance—General	1	ı	235	235	ı	ı	235	235
Taxes	1	ı	675	675	ı	ı	675	675
Depreciation	2,164	964	}	3,128	2,164	964	ı	3,128
Miscellaneous	144	112	ı	256	132	134	ı	266
	\$85,911	\$18,507	\$16,873		\$77,996	\$17,439	\$16,427	
Allocated on basis of direct labor	12,216	4,657	16,873*		11,745	4,682	16,427*	
Total	\$98,127	\$23,164		\$121,291	\$89,741	\$22,121		\$111,862

\* Red.

**EXHIBIT 5**Commercial and Administrative Expense—March, 1957

	March 1957	February 1957
Officers' Salaries	\$ 4,800	\$ 4,800
Office Salaries	12,542	12,467
Commissions to Agents	3,423	2,603
Office Supplies	1,153	844
Telephone and Telegraph	563	571
Group Insurance	865	847
Postage	144	132
Traveling	723	674
Advertising	2,109	1,387
Legal and Professional	240	200
Dues and Subscriptions	60	40
Social Security Tax	142	130
Depreciation	212	212
Miscellaneous	223	177
	\$27,198	\$25,084
Allocated: *		
Plant A	\$17,775	\$16,121
Plant <i>B</i>		8,963
	\$27,198	\$25,084

<sup>\*</sup> Allocation is made to plants on the basis of specific information where available. The remaining amount is allocated on the basis of percentage of sales.

**EXHIBIT 6**Fixed Assets and Reserves for Depreciation—March, 1957

		Fixed Assets	
	Balance Mar. 1, 1957	Additions	Balance Mar. 31, 1957
Land Buildings Machinery and Equipment Delivery Equipment	\$ 32,174 246,927 458,429 8,278 \$745,803		\$ 32,174 246,927 460,573 8,273 \$747,947

	Rese	erves for Deprec	iation
	Balance Mar. 1, 1957	Additions	Balance Mar. 31, 1957
Land Buildings Machinery and Equipment Delivery Equipment	\$ 55,710 131,280 6,118 \$193,108	\$ 614 2,602 124 \$3,340	\$ 56,324 133,882 6,242 \$196,448

# Internal Control and Internal Audit

ONE AREA OF MANAGEMENT THAT AFFECTS ALL PHASES OF A COMPANY'S operation and which is generally the direct responsibility of the controller is internal control. Internal audit, too, whether considered as a separate function or as a part of internal control, affects all areas of operations. This is particularly true since the internal audit function has been expanded in many companies to become, in part, the "eyes of management."

The following cases examine the problem of planning and using the concept of internal control in safeguarding assets and reviewing operations. The problem of weighing the benefits derived against the cost involved comes up for constant re-examination. Other cases examine the role of the internal auditor in a company's operation. The internal auditor does not in all the cases below report to the controller; but his work falls within the controller function as defined in this book.

- A. Internal control
  - 6. Oatsy-Toasty Company
  - 7. Hartshorn Furniture Company
  - 8. Hillyard Iron Works, Incorporated
  - 9. Drayer-Hanson, Incorporated
  - 10. Algonquin Rubber Company
- B. INTERNAL AUDIT
  - 11. Stratford Foods, Incorporated (II)
  - 12. Richland Corporation
  - 13. Northern Alliance Company
  - 14. The Dolphin Manufacturing Company
  - 15. The Westco Oil Company

# **OATSY-TOASTY COMPANY**

# Problem of Internal Control

This case presents a problem of cash control for a company starting a large premium program involving cash and box tops for premiums.

The Oatsy-Toasty Company was a manufacturer of a well-known breakfast cereal—Oatsy-Toasty. Approximately 200 people were employed in its general office in Kansas City, Missouri.

Receipts from the sale of its product were deposited by branch sales offices in bank accounts in the principal cities of the country and duplicate deposit slips forwarded to the cashier's department in the general office.

In an effort to stimulate sales, the sales department was contemplating a premium offer of a toy compass in exchange for one box top plus 15 cents in cash (stamps not accepted). It was estimated that, after the premium advertising campaign had been instituted, approximately 800,000 requests for premiums would be received. Three months were scheduled for the premium offer and replies were expected roughly in this order:

1st month	200,000
2nd month	350,000
3rd month	250,000
	800,000

An outline of the major checks made by the internal auditing department is shown in Exhibit 1.

As a member of the internal auditor's staff attached to the controller's office, you are requested to prepare a summarized program on the two following points:

What preliminary advice, if any, should be furnished the sales department prior to the offer?

What specific procedures do you recommend to control the receipt of cash for premiums?

#### EXHIBIT 1

# Auditing Department—Outline of Major Checks

#### FINANCIAL STATEMENT

#### I. CASH

#### A. Cash on Hand

a. Count petty cash fund immediately upon arrival at offices, and check total to general ledger.

# B. Cash in Banks

- 1. Divisional and district offices
  - a. Obtain bank reconciliations for preceding month-end, verify them in detail, and investigate internal control.
  - b. Reconcile bank balances to general ledger.
  - c. Examine bank reconciliations for three other months.
  - d. Examine checks returned with bank statements of latest month for dates, amounts, payees, signatures, endorsements, and cancellations.
  - e. Verify checks outstanding at previous audit by inspection of returned checks.

#### General office

- a. Prepare a daily report of depository cash balances.
- b. Verify daily transfers of funds from divisions.
- c. Verify all transfers of funds between bank accounts.d. Prepare monthly reconciliations of all bank accounts.
- e. Trace cancelled checks to cash disbursements journals.
- f. Examine endorsements on cancelled checks returned with bank statements for one month in each fiscal year.
- g. Investigate voided checks and reasons therefor in connection with each monthly reconciliation.

#### II. RECEIVABLES

# A. Current, Doubtful, Memo Bad Debt, and Miscellaneous Accounts

- a. Circulate verification statements to customers and/or collection agencies.
- b. Inspect all notes and collateral, if any.
- c. Ascertain that no accounts have been removed from bad debt ledger without authority.
- d. Determine that transfers to allowance account are in accordance with requirements of accounting instructions.

### B. Drafts Receivable

- 1. Drafts deposited with central bank for collection
  - a. Verify by correspondence with central bank.
- 2. Drafts handled under Transcontinental Collection System
  - Verify with collection banks all past-due drafts, all sight and arrival drafts over ten days old, all straggling balances, and a sufficient number of additional drafts to constitute a total

verification of at least fifty per cent of the total amount outstanding.

# C. Foreign Accounts

a. Verify balances by examining subsequent collections, or circulate verification statements to customers or collection agencies if such action is practical and a satisfactory confirmation of the accounts cannot otherwise be secured.

#### III. INVENTORIES

#### A. Finished Products

- 1. Major warehouse stocks
  - a. Count all stocks.
  - b. Examine physical condition of stock and storage facilities.
  - c. Determine frequency of counts by local personnel, and review the differences disclosed and the disposition thereof.
  - Review old stock reports prepared locally and check method of preparation.
  - e. Review turnover figures on warehouse stocks, if available.
- 2. Smaller branch stocks (less than 500 cwts. or equivalent)
  - a. Check salesmen's recent counts or verify by correspondence with warehousemen.
  - b. Review frequency of counts by company representatives.
  - c. Review differences disclosed by previous counts by company representatives and determine disposition of such differences.
  - d. Review old stock reports prepared locally and check method of preparation.
  - e. Review turnover figures on warehouse stocks, if available.
- 3. Merchandisers' truck stocks
  - a. Review frequency and results of stock audits made by company supervisors.
- 4. Foreign stocks
  - Review frequency and results of stock audits made by company representatives or public auditors.

#### B. Empty Packages

- Count all secondhand cartons and sacks and selected representative brands of larger sizes of new cartons and sacks.
- b. Review frequency and results of local counts of sacks.
- c. Review local reports of slow-moving and inactive sacks.
- d. Test-count approximately fifty per cent of the containers, cartons, and shells at cereal plants.
- e. Inspect physical condition of inventory and storage facilities.

#### C. Premium Stocks and Coupons

- a. Test-count stocks of premiums and coupons.
- b. Determine frequency of counts by local personnel, and review the differences disclosed and the disposition thereof.
- c. Review procedures in effect for controlling cash-value coupons, from both physical and accounting points of view.

d. Conduct investigations of questionable silverware orders through division controllers as such orders are referred to the Auditing Department by the Coupon Service Department, and recommend to the latter department that orders be filled or declined on basis of these investigations.

# D. Valuation of Inventories

a. Determine accuracy of cost cards where applicable.

b. Test-check accuracy of pricing and extending.

c. Review procedures, basis of valuation, and unusual factors or adjustments. Make tests to determine that local checks are operative.

## IV. OTHER ASSETS

# A. Prepaid Expense

a. Check quantities and valuations set-up in latest closing.

b. Investigate control over tangible assets represented.

## B. Prepaid Insurance

a. Review schedules for unusual factors.

b. Check accuracy of monthly write-offs and of prepaid balances on company car ledger.

# C. Employees' Expense Advances

a. Confirm balances by verification statements if such statements have not been circularized within the last six months.

# D. Company Cars

a. Review schedules for unusual factors.

b. Check accuracy of capitalization (from vouchers) of all automobiles acquired during the audit period.

c. Check accuracy of depreciation charges and of depreciated balances on company car ledger.

d. Review adequacy of control over (and reimbursement for) personal use of company cars.

# E. Due from Employees

 a. Review local trial balance for regularity of payments and unusual factors.

b. Examine notes covering emergency loans to employees, and ascertain that each loan is properly approved.

#### F. Termination Accounts Receivable

a. Verify by correspondence with debtors or collecting agencies, or both.

 Review accounts with credit manager and/or sales manager for probability of collection.

#### G. Advances to Venders

 Verify balances by correspondence or by subsequent collections.

## H. Stocks, Bonds, and Miscellaneous Investments

a. Examine any securities carried on records of outside offices, and investigate bases of valuation.

## I. Fixed Assets

- a. Test-check the physical existence of machinery and equipment to and from the equipment number records secured from Kansas City.
- b. Review procedures for assembling charges against open projects and work orders.
- c. Test-check accuracy of charges to open projects or work orders from supporting papers.

## V. LIABILITIES

## A. Accounts Payable

- Review schedules of unpaid bills for reasonableness and for unusual factors.
- b. Make suitable verification of larger miscellaneous accounts payable.
- c. In connection with audit of vouchers, determine any omissions from previous monthly schedule of unpaid bills.

## B. Thrift Accounts

a. Investigate procedures for accruing and crediting interest, and test-check the accuracy of such computations.

#### C. Accrued Taxes

a. Investigate procedures and review the tax accrual for reasonableness.

#### D. Provision Accounts and Reserves

a. Make no audit of balances or transactions in the provision accounts.

## E. Capital and Surplus

a. Make no audit of balances in capital and surplus accounts.

### INCOME AND DISBURSEMENTS

#### VI. INCOME

#### A. Invoicing

- a. Check invoices applying on contract for one month for all factors.
- b. Trace invoices for one month to the invoice journal.
- c. Check footings and cross-footings of invoice journal for two months, and trace totals to general ledger.
- d. Review corrections issued during several months of the audit period.

## B. Cash Receipts

1. Divisional and district offices

- a. Check all cash receipts for two months from deposit reports and other supporting papers to cash receipts book and bank statements.
- b. Check individual collection reports for two periods of two weeks each to deposit reports.
- c. Check footings and cross-footings of cash receipts journal for two months, and trace totals to general ledger.

d. Watch for unrecorded receipts.

2. General Office, Kansas City

- a. Check daily deposits to General Office, in concentration center banks under the Transcontinental Collection System.
- b. Check daily deposits to the accounts of Oatsy-Toasty Inc. (consisting of those by the executive offices, by the Mechanical Division, by the Minneapolis grain department, by the Research department, by the Coupon Service department, by the Twin City and Great Falls offices of Central Division, by the New York offices of the Eastern and Special Commodities Divisions, by the Minneapolis offices of the Chemical and Purity Oats Divisions, and by the entire Farm Service Division).
- Make no audit of the detail of General Mills collections received and deposited at Minneapolis.

## VII. PURCHASES

# A. Grain, Including Coarse Grains

- a. Check in detail ten to fifteen per cent of carload grain settlements issued to and received from outside dealers.
- Check detail of ten to fifteen per cent of cash car purchases made during audit period.

c. Check all cargo purchases.

d. Check all delivery wheat taken during period.

- e. Check ten to fifteen per cent of truckload grain settlements.
- f. Check ten to fifteen per cent of country elevator warehouse receipts issued.

g. Check future transactions for two half-months.

 h. Check purchase and sales statements from brokers for two half-months.

## B. Merchandise and Ingredients

a. Check transactions for one month against purchase records for correctness of application, pricing, and bases.

 Test-check entries in purchased merchandise journal from original copies of material received reports.

c. Test-check freight payments on merchandise purchased f.o.b. destination.

d. Verify by correspondence all purchases with outside vendors that have remained open for sixty days or more.

## C. Empty Packages

a. Check in detail all purchases for one full month.

b. Check purchases encountered in two scattered half-months when auditing the cash disbursements.

 Test-check individual receiving reports, using the copy attached to vouchers, to the inventory records.

d. Review local verification of sacks in hands of vendors.

e. Review local verification of contract balances with bag companies if contracts are placed locally.

# D. General Office Purchasing Department

a. Verify open purchase contracts of the department.

Examine the national contracts and the empty package purchases placed for the operating divisions.

c. Test-audit purchases made through the department.

 Review procedures and responsibilities for obtaining bids on supplies and receiving special discounts.

e. Test-check preparation of principal operating reports used by the management.

f. Review control exercised by purchasing department over purchasing activities of the divisions.

g. Review position reports in relation to the policies of the Purchasing Committee.

## VIII. OTHER DISBURSEMENTS

# A. Expenses and Miscellaneous Disbursements

 a. Audit in detail all vouchers for one full month and every third voucher in two scattered months.

b. Check the vouchers for the full month audited to the cash disbursements journal.

c. Verify footings and cross-footings of the cash disbursements journal for two months, and trace totals to general ledger.

d. Check some vouchers for one month against truck slips or other record of receipts from vendor in receiving clerk's office.

e. Examine ten to fifteen per cent of the expense drafts issued at country elevators for supporting papers, approvals, and distributions.

f. Review expense schedules, and investigate unusual items, particularly the less controllable ones such as postage, express, and unclassified expense.

g. Review all procedures in detail.

# B. Factory Payroll

a. Distribute all wage pay checks included in first payroll after auditors' arrival, securing employees' signature of receipt.

b. Compare signatures secured with those in Personnel Department files for authenticity.

 c. Compare names obtained with names on preceding payroll, and investigate all additions or deductions.  d. Check one payroll for rates, time, extensions, authorizations, and procedures.

## C. Salary Payroll

 Investigate procedures and test-check accuracy of overtime payments to salaried employees and of salesmen's incentive payments.

#### D. Dividends

 a. Compare the dividend check data in Kansas City with that in the certified listings secured from the Transfer Agent yearly.

#### **OPERATIONS**

#### IX. INSURANCE REPORTS

 Review basis on which insurable values of inventories are reported to Kansas City.

b. Review reports for one month to determine that procedures are adequate and that principal factors are given consideration.

 Once each year, summarize and analyze losses reported to bonding companies.

d. Make no audit of records and activities of Kansas City Insurance Department.

#### X. SALES RECORDS

a. Investigate the sales records procedures.

b. Determine from local reports the extent of past-due contracts on unfilled orders report of previous month, and review major past-due bookings with sales executives.

#### XI. CREDITS

# A. Analytical Schedules

a. Prepare comparative aged trial balance of current accounts receivable as of present and previous audit.

b. Compute net change in total old accounts during period.

c. Determine rate of bad debt loss on deliveries involving credit.

d. Prepare analysis of controls for Doubtful Customers' Accounts Receivable and Allowance for Bad Debts from local summaries.

# B. Review of Accounts

a. Review with credit manager all customers' accounts over thirty days old, all past-due draft accounts, and all doubtful and memo bad debt accounts.

b. Test-review condition of credit files by examining those for selected accounts (particularly including old and large accounts), and examine credit limits and terms for the accounts involved.

- Determine whether credit committee operations conform with executive requirements.
- d. Review files on all accounts in hopeless section of bad debt ledger to confirm uncollectible status of these accounts.
- e. Review accounts charged off during period to determine that company requirements are being followed.

## C. General

a. Review procedures to determine that in general company policy and executive requirements are being followed.

#### XII. TRAFFIC

# A. Transit Operations

 a. Check in detail the accuracy of the transit inventory as of the most recent closing.

 Review procedures, monthly reports, and reconciliations relating to control over transit billing and relationship of stocks and billing.

c. Make no review of billing applications.

# B. Freight Payments

a. Check freight payments on inbound and outbound shipments for one or two weekly periods.

b. Check payments for demurrage incurred during audit period and investigate control over this expense.

# C. Transportation Claims

a. Review records and procedures.

b. Review uncollected claims.

### D. General

a. Review procedures in compiling freight variations and check variations for one month.

#### XIII. MISCELLANEOUS

## A. General Procedures

a. Investigate adequacy of internal control.

Review records and procedures involved in various operations.

c. Determine that procedures conform to authorized manuals and accounting instructions.

## B. Foreign Exchange

a. Verify foreign exchange position of New York Export Office.

b. Review foreign exchange operations to determine that no speculative position has existed.

## C. Organization Charts

a. Prepare organization charts of each office.

b. Determine reasons for increase or decrease in personnel.

c. Secure executive approval on charts prepared.

#### D. Statistical Records

a. Make no review or verification of statistical records, other than to ascertain that they are being maintained in a current condition.

## E. Special Audits

a. Audit Coupon Service Department, Advertising Department, and Research Laboratory at approximately eighteen month intervals.

## F. Other Operations

- a. Review the procedures and computations on interdepartmental contracts.
- Review journal entries and credit names for two months of audit period.
- Inspect general records, and check closing work sheets for latest month.
- d. Test-check various reports prepared for operating usage.
- e. Investigate and report to General Auditor on propriety of exemptions under Wage and Hour Law (lists of such exemptions furnished by the Personnel Department).

## XIV. AUDIT REPORTS AND FOLLOW-UP

## A. Audit Reports

- 1. Summarized reports
  - Issue copies to General Office executives and division chief executive.
  - Issue report within fourteen days of the completion of the audit.
- 2. Detailed reports
  - a. Circulate copies to interested department heads of General Office and divisional controller.
  - b. Issue report within six weeks of the completion of the audit.

## B. Audit Follow-up

- a. Maintain follow-up files on each office audited.
- b. Institute follow-up for complete settlement of weaknesses and suggestions presented in report.

## HARTSHORN FURNITURE COMPANY

Problem of Internal Control

In this case a specific problem of fraud is presented showing a defect in the internal control procedures of a national chain of furniture stores.

The following case of fraud is reported to you as chief auditor of a large national chain of furniture stores.

In your Pittsburgh store two elderly ladies purchased \$1,200 worth of furniture on an installment account. Terms were monthly payments of \$100 per month for twelve months. The furniture was to be used in a genteel rooming house and the ladies had adequate credit references. Each month for six months the ladies appeared at the store with a check for \$200, asking to receive \$100 in cash as change. They pointed out they only came to the shopping area once a month and they could by this procedure avoid a trip to the bank. The seventh month they failed to appear, and after notice of a past due payment, they wrote to the store saying they had paid in full, and they had cancelled checks to prove it. A local attorney of the company advised the company not to attempt suit.

Each person having an installment account received a book similar to a bank book. As payments were made, the store cashier entered the date and amount of payment and returned the book to the purchaser. The cashier, in addition, prepared a remittance slip for company internal use, showing name, date, amount, and account to be credited.

·

What change in procedure would you institute to avoid a repetition of this fraud?

# HILLYARD IRON WORKS, INCORPORATED

## Raw Material Control

This case raises the issue of effective control over raw material inventories. The purpose and value of typical perpetual inventory records are examined.

In late 1957 the management of the Hillyard Iron Works, a large foundry located in the vicinity of Detroit, was apprehensive about the system by which the company handled its raw material from the time it was purchased until used in the production process. Particularly, the management was concerned about the physical control over its scrap and pig iron inventories and about the proper mix of these raw materials in the production of castings.

The Hillyard Iron Works, Inc., was a subsidiary of Hillyard Machines Corporation, a manufacturer of machine tools. The iron works produced castings for various machine tools used in the automotive manufacturing industry. The company employed about 300 men in its shop.

#### The Production Process

The operations in the foundry could be broken down into three phases: (a) mold making, (b) pouring off, and (c) removing and cleaning the casting.

The mold is formed by impressing a pattern (a wood, aluminum, or cast-iron replica of the part to be cast) in a box of molding sand. Where openings or holes are required in the casting, cores of baked sand are placed in the proper position in the sand mold. The mold is then ready for pouring.

Pouring off is the process by which the molten iron is transferred from the furnace, by means of large, specially constructed buckets, to the mold. After the molds have been allowed to cool, the sand is removed from the casting and the casting is then cleaned and finished.

The raw material which feeds this process is the molten iron, or

melt. The melt is prepared by "charging" the furnace with coke, pig iron, scrap iron, limestone, spiegeleisen (a manganese compound), and other chemical ingredients. The charge is heated by firing the coke under forced draft until the iron is brought to the critical temperature. Great care is required in heating the charge. If the iron is poured when too cool, it will not run properly. If, on the other hand, the iron is too hot, it takes on certain undesirable chemical properties. There were two means by which the company tried to control the heating of the charge. Men who had had long experience in the heating of charges tried to determine by inspection, through a special quartz eye hole provided in the furnace, when the charge had reached the proper temperature for pouring. Secondly, physicists, with spectrometers—instruments used to aid in the computation of the heat of the furnace by measuring light intensity—tried to determine when a charge was ready to be tapped.

The furnaces are about 40 feet in height. The tap hole from which the molten iron is poured is located at the base in front of the furnace. About 15 feet up, at the back of the furnace, is a large aperture through which the furnace is charged. The charge is fed into the furnace at this opening and is slowly melted until it reaches the proper temperature to be poured into the molds. Hillyard normally operates only one furnace at a time. Since the intense heat makes the frequent replacement of fire bricks necessary, and because a furnace requires an "overhaul" after each day's operation, three furnaces were considered necessary in order to insure the continuous operation of one.

#### **Raw Materials**

All raw materials, with the exception of chemicals, were purchased by Hillyard in carload lots. Coke and limestone, for example, were brought in by the carload and deposited in bins, each of which held one carload. Thus by tallying the number of bins a rough physical inventory count was provided. Valuing each bin was not difficult since the price of each carload was known. When all bins had been counted, priced, extended, and totalled, a raw material inventory figure for coke or limestone was available for balance sheet presentation. Perpetual inventory records were maintained for these items, and official physical inventories were taken twice a year. At various

times during the year, the shop superintendent made additional unofficial checks by noting the number of full bins and comparing them with perpetual inventory records.

Purchases of coke and limestone were made on the basis of inventory records. Recorders were placed on a maximum-minimum basis. Materials were purchased by the pound even though there were only slight variations from carload to carload. They were ordered into production by the bin. The Hillyard management believed it exercised adequate control over these raw materials.

Even more exact information was kept on the spiegeleisen and other chemical compounds. Since relatively small quantities of these items were used, the amounts were carefully measured out on a small scale used solely for the purpose. Perpetual inventory records were maintained and semiannual physical inventories taken. Purchase procedure was the same as for coke, except that closer control over the quantity on hand was considered essential in view of the high cost of these items.

The company's management felt somewhat less comfortable, however, about the degree of control it exercised over the purchase, storage, and consumption of its scrap and pig iron and the method by which the inventories of those items were valued for balance sheet presentation.

Scrap iron was stored in a large pile in the yard behind the foundry. Pig iron was kept in bins behind the base of the furnace inside the foundry. Pig iron was delivered directly from freight cars to the bins by way of a railroad siding which ran into the shed. Scrap and pig iron were purchased by the ton, and Hillyard purchased both items in carload quantities. Quantities billed by suppliers were checked by Hillyard by weighing the loaded cars when received and deducting the known weights of the freight cars empty. Discrepancies between quantities billed and received were extremely rare. The absence of such discrepancies was probably due in part to the fact that each carload was weighed four times during shipment; once by the shipper; twice by the railroad (at shipping point and at destination); and once by Hillyard.

Hillyard used about 250 tons of pig iron per month and about 350 tons of scrap. A carload contained approximately 50 tons of pig iron or about 35 tons of scrap. The company tried to maintain a two-

to three-month supply of both pig and scrap iron on hand at all times. The prices of these two items in July, 1957, were, for scrap iron, about \$54 per ton; and for pig iron, about \$66 per ton.

Hillyard normally charged its furnaces about 10 times a day. The amount of pig iron in a charge ranged from 1,600 to 2,000 pounds.

The Hillyard management was particularly concerned over repeated discrepancies which were showing up between the amount of iron inventories reflected by the perpetual inventory records and the amount disclosed by physical measures or counts of inventories. For some time quarterly physical inventory checks had indicated somewhat less than a month's supply on hand when stores records indicated inventories sufficient for two months' operations. Although it was generally believed that some discrepancy between inventory records and physical counts could be expected, because of the difficulty of "counting" iron inventories, it was somewhat disconcerting that the count should always be on the low side.

The method of controlling pig and scrap iron at Hillyard was similar to that of controlling coke. Perpetual inventory was kept, in pounds, and purchases were recorded on the inventory card. Buying was done on a maximum-minimum basis. Each production card ordering iron out of inventory was recorded, the amounts ordered out being determined by weight. Each cupola of pig or scrap iron was weighed as it was pushed up to the blast furnace. This weight was recorded as the amount entering each charge.

After studying the company's inventory system, the management came to the conclusion that the cause of the loss of iron was the inaccuracy of the scale. Company officials had the scale tested and calibrated frequently, but the loss of iron continued. Finally engineers inspected the system, and their conclusions, although not certain, were to the effect that the first load each morning threw the scale off, and each load thereafter heightened the defect. After a night of non-use, the first weighing in the morning was accurate. The inaccuracy in the scale was believed to come from the continuous shock of having heavy loads dropped on it. It was not believed that a new scale would overcome this problem, nor had the company been able to change its handling procedure to lessen the shock.

The extent of the inventory losses that might possibly arise through inaccurate measures of amounts consumed is indicated by the daily usage of iron. The furnace was usually charged 10 times a day, each charge, in the case of pig iron, consisting of from 1,600 to 2,000 pounds. Thus, an error in the measurement of the charges of even 5% or 10% could account for a loss of about 25 tons in a month. Actually, according to the company's estimates, as much as 75 tons of pig iron had disappeared in a month indicating error somewhat in excess of 10%. Similarly, an error of 10% in measuring the amount of scrap iron used could result in the loss of 35 tons (one carload) in about a month and a half. The company had never lost more than one carload in a month.

As a step toward determining the cause of these so-called inventory losses, and toward the establishment of more realistic inventory figures than the management felt had appeared in past financial statements, the company, in 1957, hired an engineering firm to conduct a monthly physical inventory count. Each month, inventory records were adjusted to agree with the engineers' findings.

## EXHIBIT I

# Hillyard Machines Corporation Balance Sheet—December 31, 1956

Assets	
Cash and Securities	\$ 2,000,000
Receivables, net	3,400,000
Inventory	6,000,000
Income Tax Refund	150,000
Total Current Assets	\$11,550,000
Fixed Assets, net	10,000,000
Prepayments	4,500,000
Total Assets	\$25,050,000
Liabilities	
Accounts and Notes Payable	\$ 2,000,000
Accrued Taxes	600,000
Federal Income Tax Reserves	2,000,000
Total Current Liabilities	\$ 4,600,000
Capital Stock	10,000,000
Capital Surplus	6,000,000
Earned Surplus	4,450,000
Total Liabilities	\$25,050,000

The Hillyard management considered the use of the engineering staff only an interim arrangement pending the development of a sounder basis for the control of its pig and scrap iron through the complete cycle of purchasing, storing, and using.

The balance sheet of the parent company, Hillyard Machines Corporation, as of December 31, 1956, is shown in Exhibit 1. No separate figures were available for the Iron Works.

How would you approach this company's inventory control problem? Do you think this problem can be best solved by correcting the scale?

# DRAYER-HANSON, INCORPORATED

Work in Process Inventory Control
In the Matter of Drayer-Hanson, Incorporated <sup>1</sup>

This case examines the action of the Securities and Exchange Commission in a case involving an accounting error. It also considers the problem of appraising internal control procedures for in-process inventories.

Action by the Securities and Exchange Commission against accountants whose work is deemed deficient may result in direct discipline by the Commission in the form of suspension or disqualification from practice before it, or in disciplinary action by professional societies and state agencies, or it may have consequences less direct but certainly very damaging to the accountant in the form of judgments under the Civil Liability sections of the law.<sup>2</sup> A determination by the SEC that the certificate of an auditing firm contains inaccurate and misleading statements throws open the legal doors to damage suits against the accountant by parties who have suffered losses on securities to which the certificate related.

In most cases the Commission has limited itself to criticism of the accountant; the burden of guilt where the registration statement has been found to contain false and misleading statements has usually fallen on the company management alone. But in 1948, the Commission made such a finding with respect to the accountant's certificate in the Drayer-Hanson case. Pertinent excerpts from that case follow:

In order to acquaint shareholders with the liabilities imposed by the Securities Act, we will briefly discuss the applicable provisions of the Act. . . .

Speaking generally, Section 11 of the Securities Act creates a right of action upon the part of an investor to recover damages he may have suffered as a result of his investment if he can prove that as of its effective date the registra-

<sup>&</sup>lt;sup>1</sup> Securities and Exchange Commission, Securities Act of 1933, Release No. 3277, March 18, 1948.

<sup>&</sup>lt;sup>2</sup> See case CAP 72 entitled "Authority of the Securities and Exchange Commission to Discipline Public Accountants Under the Securities Act of 1933 and the Securities Exchange Act of 1934."

tion statement pertaining to the security which he acquired contained material misstatements of facts or omitted material facts necessary to be stated in order to make the facts stated not misleading. It is not necessary for the investor to prove that he acted in reliance upon such mistatements or omissions. The right of action exists against (1) the company; (2) every person who signed the registration statement; (3) any expert upon whose authority statements were made in the registration statement with his consent, but only in respect of such statements; (4) the directors; and (5) the underwriters. The company can defend itself against such right of action only to the extent that it can sustain the burden of proof that the decline in value of the investor's security was not the result of its misstatements or omissions in the registration statement. In addition to this defense which is also available to the other persons named above, they will not be liable if they can sustain the burden of proof that, based upon the standard of conduct of a reasonably prudent man in the administration of his own affairs, they, after reasonable investigation, had reasonable ground to believe and did believe at the time the registration statement became effective that the statements therein were true and that there was no omission of material facts necessary to be stated in order to make the facts stated not misleading.

The pre-war and wartime record of earnings of the company's predecessors, recomputed on a corporate basis, were insufficient in any year prior to 1945 to cover the dividend requirements on the Class A shares which would have been outstanding after giving effect to the financing.<sup>3</sup> In the course of the negotiations between the company and Maxwell, Marshall & Co., an oral understanding was reached to the effect that the bankers would not undertake the financing operation unless the result of an audit by Barrow, Wade, Guthrie & Co. of the financial statements of the partnership for the ten months ending April 30, 1946, computed as though the partnership had been a corporation, indicated net income at least equal to one and one-half times the annual dividend requirement on all of the Class A shares which would be outstanding after giving effect to the sale of approximately 80,000 shares of Class A stock to the public. The underwriting house also stipulated that the audited balance sheet of the partnership as of April 30, 1946, must show a net worth to be transferred to the company of at least \$250,000.

An audit by Barrow, Wade, Guthrie & Co. of the partnership accounts as of April 30, 1946, represented the partnership net worth to be approximately \$260,000. Similarly such audit represented net earnings of the partnership for

<sup>&</sup>lt;sup>3</sup> Annual dividend requirements on the 100,000 Class A shares which were to be outstanding amounted to \$60,000. Net income of the predecessor corporation for the period 1936 to 1944, inclusive, and for the six months ended June 30, 1945, were as follows:

Year	Net Profit (Loss)	Year	Net Profit (Loss)
1936	\$ (4,144.69)	1941	16,418.57
1937	(20,395.42)	1942	17,622.97
1938	(5,777.69)	1943	7,201.22
1939	986.47	1944	26,914.10
1940	9,011.45	Six months ended	
		June 30, 1945	25,922.09

the ten months ended April 30, 1946, to be approximately \$181,000 for the partnership, and approximately \$91,000 when computed as though the partnership had been a corporation. The latter amount was slightly in excess of one and one-half times the annual dividend requirements on all of the Class A shares which would have been outstanding if all of the Class A shares to be offered publicly were to be sold. The prospectus, following its summary of earnings, specifically stated the annual dividend requirements to be \$60,000.

As will appear later in this report concerning the accounting errors, the net worth of the company actually did not equal \$250,000 and the earnings did not equal one and one-half times the dividend requirements. Sales of the Class A stock ceased on April 16, 1947. These accounting errors were ascertained in

June of 1947.

Between December 16, 1946, and April 16, 1947, a total of 59,030 shares of Class A stock out of the 80,529 shares offered by the company and Maxwell,

Marshall & Co. were sold to the public.

Some time in June of 1947 the company and its auditors, Barrow, Wade, Guthrie & Co., informed us that the company's controller had discovered an error had been made in the balance sheet as of April 30, 1946, and the partnership income statement for the ten months ending that date, certified by Barrow, Wade, Guthrie & Co. and contained in the registration statement and prospectus. The error consisted of an over-statement of approximately \$97,000 in an inventory item designated "work in process and fabricated parts." This resulted in an over-statement of the partnership net worth at April 30, 1946, and partnership net income for the ten months ended April 30, 1946, in the same amount. The error in the earnings computed as though the partnership had been a corporation, for the ten months ended April 30, 1946, was an over-statement of approximately \$30,000.

Misrepresentations and Omissions in the Financial Statements of the Company and Its Predecessors and in the Certificate of the Independent Accountants.

The balance sheet of Drayer-Hanson (a co-partnership) as of April 30, 1946, and the *pro forma* balance sheet of Drayer-Hanson, Incorporated (successor to the co-partnership), as of May 1, 1946, which were certified to by Barrow, Wade, Guthrie & Co. (hereinafter referred to as the auditors), and made a part of amendment No. 8 to the registration statement filed by the registrant included under the caption "Inventories" an item "Work-in-process and fabricated parts—\$244,331.60." With respect to this item the auditors' certificate dated August 5, 1946, contains the following paragraph:

"We were present only during the taking of a physical inventory, which did not include work in process, as at March 31, 1946, and satisfied ourselves as to the procedures followed in the determination of inventory quantities as of that date. We were not in attendance at the physical count of the inventories taken at the close of each of the years 1942, 1943, and 1944, and we were informed that such procedures were not performed by any other independent public accountant. In the absence of a physical inventory at

work in process at March 31, 1946, we subsequently made test inspections of selected items to assure ourselves as to the existence of the inventory and the adequacy of the related accounting data. The inventories at the close of each of the years 1942 and 1944 were reviewed by us as to the basis of pricing and clerical accuracy and we inquired into the methods used by the corporation employees in determining physical quantities to ascertain that methods were employed which would assure reasonable accuracy. We were informed that an inventory was taken as at December 31, 1943, but we were advised that such inventory was lost and therefore not available for our inspection. We were informed that no physical inventory was taken as of June 30, 1945. On the basis of the examinations and tests made by us, we have no reason to believe that the inventories as set forth in the accompanying statements are unfairly stated."

In May, 1947, representatives of the registrant reported to the auditors that they believed that the part of the inventory represented by work-in-process as of April 30, 1946, was over-stated by approximately \$97,000. Thereupon the auditors made a further examination of work-in-process inventory, and as a result concluded that there was an over-statement of \$85,313.97,4 or approximately one-third of the net worth of the co-partnership, and an over-statement of like amount in the Net Income (\$181,500) shown by the Profit and Loss Statement of the co-partnership for the ten months ended April 30, 1946, included in the registration statement.

The error in the work-in-process inventory resulted principally from the failure of the registrant to give effect to all partial shipments on the job cost sheets from which the work-in-process inventory was compiled and on the

general ledger.

A brief description of the method of accounting for work-in-process and in particular partial shipments will aid in understanding how the above described error occurred.

The registrant, a manufacturing concern, operated what purported to be a job lot cost accounting system. Under this system of accounting costs of raw materials, labor, and overhead relating to jobs in process were accumulated on job cost sheets maintained in the cost accounting department. Until such time as a job was complete the applicable job cost sheet did not contain any data with respect to quantities. Factory operations were controlled by production orders issued by the production and control departments. Such production control consisted in keeping a statistical record of the production orders issued, the number of units required to be manufactured, and the number of units completed on each production order and their disposition.

It was the practice of the registrant to make partial as well as complete deliveries of job orders both to customers and to stock, and it appears that the records pertaining to these transactions were maintained properly in the production and control department. However, the job cost sheets maintained in the cost department in some instances were not relieved of the accumulated costs applicable to partial deliveries, either to customers or to stock, until the entire

job was completed.

<sup>&</sup>lt;sup>4</sup> According to the report of Thomas & Moore...the over-statement amounts to \$89,097.79.

On March 31, 1946, a physical inventory of raw materials, fabricated parts and finished goods was taken by the registrant and observed by the auditors. However, no physical inventory of work in process was taken; instead, a list showing the accumulated cost of each job in process was prepared by the registrant. The total of this list, \$219,501.96, was found to be \$54,189.09 less than the work-in-process inventory of \$273,691.05 shown by the general ledger. The registrant then made an adjusting entry, bringing the work-in-process account on the general ledger into agreement with the adjusted accumulated cost of the production orders in process as shown by the list.

... the registrant's determination not to take a physical inventory of work in

process as at March 31, 1946, was not objected to by the auditors.

The determination not to insist upon a physical inventory of work-in-process as at March 31, 1946, was made by Henry H. Dalton, manager of the Los Angeles, California, office of the auditors, on March 27, 1946, after a discussion with M. J. Burke, an officer of the registrant who represented that the registrant maintained a job cost system, pursuant to which Dalton inspected "the book-keeping machine which maintained the cost. And . . . [he] made a cursory examination of these records" which took "about 30 minutes." He made no inquiries concerning the registrant's system of internal control, and no tests which would indicate whether the alleged job cost system was adequate or whether

it was actually in operation.

Everett L. Mangam, a senior accountant on the auditor's staff, assumed direct charge of the audit.... He found, among others, the following "deficiencies": (1) there was no tie-in between units in the plant and the dollar amounts of inventories; (2) the raw material account was not supported by a detailed stores record in dollars; (3) the segregation of material in the plant was not entirely adequate; (4) requisitions were not being prepared for all material withdrawn from stores and frequent retroactive requisitions "necessary . . . to bring the costs up to the proper material consumption" were noted; (5) no record was kept in the accounting department or the cost department of the units manufactured to date; (6) while a job was still open, the applicable job cost sheet in the cost department would not show how many units had been produced, or shipped, applicable to that job to any particular date; (7) no record was kept on the job cost sheets of units and dollars transferred to finished goods either for partially or entirely completed jobs; and (8) many instances were noted where no record was made on the job cost sheets of partial shipments, either to customers or stock. He concluded that there was "necessity for the revision of the cost system in general" but he, nevertheless, believed that he would be able to use alternative procedures to assure himself with respect to work-in-process "that the inventory was there." He did, however, express concern "because of the additional responsibility and the amount of difficulty in making an examination of an inventory where a physical inventory is not available for a check" and indicated his feeling that, under the circumstances, "to get an exact picture of the work-in-process" he "would have to review very carefully almost all of the [open] jobs" of which, he stated, there were approximately 300 as at March 31, 1946.

The audit procedures employed by the auditors to satisfy themselves as to

the correctness of the list, purported to be the work-in-process inventory as at March 31, 1946, presented to them by the registrant were as follows:

1. Approximately 75 (out of approximately 300) of the production orders in process at March 31, 1946, were examined to determine the amounts of raw material which should have been charged to each job and the applicable job cost sheets in the cost department were examined to make sure that the materials were in fact so charged.

2. They "made an attempt to remove all of the non-productive jobs or the jobs which were not in process for the purpose of producing a product which could be sold or a part which could be used later in the product which would be

sold."

3. They "inquired regarding the method of accumulation and the method of removing the partial shipments shown therein," and

4. They made a physical test of work-in-process on May 8, 1946, "in an effort to ascertain whether the balances at April 30 were reasonable."

Concerning the scope of this physical test, Mangam testified in part as follows:

"... Since the balance sheet was to be dated April 30, 1946, and since the work-in-process listing at March 31, 1946, was merely a book listing, we decided to use the listing of work-in-process jobs at April 30, 1946. We therefore were obliged to check the entries and transactions for the month of April as they affected work-in-process. We were also obliged to prepare our own list of costs applicable to open jobs in work-in-process because the company did not run a list of its own at that date. We used that list prepared by us as of April 30th as a basis for all of our subsequent checks on work-in-process balances.

"We also, on May 8th, spent approximately one day in the plant testing items in various departments by observation or actual count. We were accompanied at that time by the production control manager. We tested the result of our inspection tour against the records of the production control department.

"The work sheet shows that we checked 17 job orders.... I believe there were approximately 300, I haven't counted them.... It appears that the total accumulated cost on the job orders checked by us was approximately \$70,000.

"Two of us selected items in the plant which were in process. We reconciled the balances which we found in production with the records kept in the production control department. We referred to the job order to see that there was a job order, and we made subsequent reviews of the cost to see that the cost was normal for the particular unit being produced, that the requisitions were properly applicable thereto, and that the labor charges were also proper.

"We went through the plant, starting at the primary departments, and selected various jobs in process in that department at that time. We would

select large items, count them, get a description of them, obtain the job number to which they applied, and make a note of it on our sheets, and move on to another department to select items in that department by the same method.

"We believed that at March 31st the partial shipments had been recorded against the accounts, against the open job orders. We believed that the adjusting entry in April [see below] was wholly a means of correcting a situation in which the company found itself at that date, where they had to have a proper classification of inventory.

"The tests indicated that partial shipments had been made. On the basis of our tests, we estimated approximately how much of a credit we need for partial shipments."

These procedures disclosed no differences warranting adjustment, and no change was made, in the amount of work-in-process as shown by the list originally prepared by the registrant.

As stated previously, the registrant found it necessary to make periodic entries, substantial in amount, adjusting the work-in-process account on the general ledger. Such an entry credited approximately \$31,000 to work-inprocess and charged a like amount to finished goods as at April 30, 1946. The auditors saw this entry and considered its purpose to be "to bring the finished goods inventory account into agreement with a physical inventory taken on April 30, 1946, of finished goods, and to transfer the excess credit in that account to work-in-process. The credit was to represent the amount of partial shipments or the estimated cost of the partial shipments made from jobs still open in work-in-process account . . . It indicated to us that the system of crediting work-in-process for the month of April was not satisfactory; it represented a stop gap entry."

Notwithstanding the purported nature and amount of this entry, the auditors did not analyze the entry or even check into the supporting work papers. Furthermore, there were similar adjusting entries, involving substantial amounts, recorded in August and October 1945, and in January, February, and March 1946. They likewise did not attempt to analyze or to verify the correctness of

these entries.

In our opinion the taking of a physical inventory of work-in-process at the time other inventories are counted is, except in rare instances, a necessity. We can find no extenuating circumstances which might justify the failure of the registrant in this instance to take such an inventory as at March 31, 1946. Indeed, in light of the conditions which, as shown by the record, existed as at that date there was a demonstrated need for a complete and painstaking inventory.

It seems clear, also, that the representatives of the auditors should have made a more thorough examination of the registrant's system of internal control and its cost system, and should have determined that they were being operated effectively before acquiescing in the omission of a physical inventory of workin-process as at March 31, 1946. And once they found, as they did in the course of their examination, that there was, in fact, no effective system of internal

control and the alleged job cost system existed more in theory than in fact, they should have insisted that a work-in-process inventory be taken as at April 30, 1946. Notwithstanding these conditions the company represented that there was in operation a controlled job cost system <sup>5</sup> and the auditors represented in their certificate that they satisfied themselves as to the adequacy of such system and the dependability of the company's system of internal control. <sup>6</sup> We find these misrepresentations to be misleading. <sup>7</sup> It seems to us, however, that the auditors' dereliction in these respects is overshadowed by the inadequate manner in which they employed alternative auditing procedures in the absence of a

physical inventory.

As stated previously, they had grave doubts as to the dependability of the registrant's cost system, particularly with respect to the accounting for partial shipments, yet they failed to check, even by test, any of the individual job cost sheets from which the list purported to represent work-in-process as at March 31, 1946, was prepared, to determine that accumulated costs applicable to partial shipments had been eliminated. Nor did they make such a check as at April 30, 1946. In fact the accumulated cost of approximately \$20,000 shown for one of the jobs included in the physical test check of 17 jobs as at April 30, 1946, referred to on page 29, was found (in the subsequent re-examination made in May 1947) to have been over-stated approximately \$13,000 due to the failure to eliminate costs applicable to partial shipments.

There can be no doubt that the auditors knew of the registrant's practice of making partial shipments for, as stated on page 28, they "inquired regarding... the method of removing partial shipments shown...[from the job sheets]." Furthermore the periodic journal entries referred to on page 31 [page 77 in this book] which effected adjustments with respect to partial shipments were seen by the auditors although they failed to grasp their significance for they

did not even examine into the supporting work papers.

It would not have been an involved procedure to test check the job cost sheets to determine that partial shipments had been accounted for properly. It meant merely the scrutiny of the production orders maintained in the production and control department, or a representative number of them to determine whether partial shipments were indicated thereon, and the examination of the applicable job cost sheets in the cost department to see that they were relieved of the accumulated cost with respect to the partial shipments. No such procedure was followed, however.

Under these circumstances we think it clear that the statement in the certifi-

<sup>6</sup> The certificate, dated August 5, 1946, stated "... we have reviewed the systems of internal control and the accounting procedures... and ... have examined or tested accounting records... and other supporting evidence by methods to the extent we

deemed appropriate."

<sup>&</sup>lt;sup>5</sup> Note "B" to the Notes to Financial Statements stated "an inventory of work-inprocess and fabricated parts has not been taken, the amounts on the balance sheet as at April 30, 1946, and September 30, 1946, being the accumulated cost of all workin-process at the respective dates determined from the individual job cost records as controlled by the general accounts."

<sup>&</sup>lt;sup>7</sup> Statement No. 1 issued in October, 1939, by the Committee on Auditing Procedure of the American Institute of Accountants states, on page 9, "Obviously, also, it would be erroneous to mention internal control if none existed."

cate of Barrow, Wade, Guthrie & Co. pertaining to the financial statements as at April 30, 1946, which was included in the registration statement—that "… [the auditors] have no reason to believe that the inventories as set forth in accompanying statements are unfairly stated"—is entirely without justification.

It is our conclusion that here again as we stated with reference to the auditing procedures followed in another case "... [the accountants'] failure to discover the gross over-statement of assets and of earnings is attributable to the manner in which the audit work was done. In carrying out the work they failed to employ the degree of vigilance, inquisitiveness, and analysis of the evidence available that is necessary in a professional undertaking and is recommended in all well-known and authoritative works on auditing." <sup>8</sup>

. . . . .

The company has agreed to mail a copy of this report to each person who purchased Class A stock offered pursuant to the registration statement. Since the essential purpose of the Securities Act, to insure disclosure of information adequate to inform investors of their rights, would appear in this case to be accomplished by the distribution of the report, we have determined not to employ the more usual remedy, i.e., the institution of proceedings under Section 8 (d) of the Securities Act to suspend the effectiveness of the registration statement. . . .

The company is also forwarding to such Class A shareholders for their consideration a proposed plan for its financial rehabilitation. As an aspect of such plan each Class A shareholder who assents to it is required to release the company, its directors and officers, the independent certified public accountants and the underwriters and others from any liability such persons may have to such shareholders at common law or under the Securities Act of 1933 or other statutory law. The plan will become effective only if accepted by the holders of at least 85% of the Class A shares sold by the company to the public. On the basis of the information contained in this report and the information supplied to him by the company in respect of its proposed plan, each shareholder will have to use his own business judgment in evaluating the merits of the plan to him as against the possibility of effectively enforcing by legal proceedings the possible liability to him at common law, under the Securities Act of 1933 or other statu-

8 In the matter of McKesson & Robbins, Inc.: Report on Investigation (p. 443).

<sup>&</sup>lt;sup>9</sup> The more important provisions of the plan are these: Each holder of Class A shares is to release the company, the underwriters, the certified public accountants, the directors and officers and others from all liability to him under the Securities Act or otherwise. Subject to the procurement of such releases from the holders of at least 85% of the Class A shares, Barrow, Wade, Guthrie & Co. has agreed to pay \$87,500 to the company; 3 directors have agreed to invest \$50,000 in Class A shares of the company; and Maxwell, Marshall & Co. has agreed to loan \$50,000 to the company, the loan to be evidenced by a note due in 5 years. Unsecured creditors of the company holding claims of approximately \$319,000 out of a total of \$358,808 of such claims have agreed, if the plan becomes effective, to accept payment of 25% of their claims within 90 days after the plan becomes effective and to accept payment of the balance of their claims in installments payable within one year. However, five of the largest creditors (holding more than two-fifths in amount of unsecured claims at January 31, 1948) have also agreed that, as to their own claims, they will further modify their demands to the extent that, after payment to them of the initial 25%, the balance owing to them need only be paid out of profits of the company.

tory law, which may exist upon the part of the company, its directors and officers, the underwriters, the certified public accountants, and others. We wish to emphasize that we have not passed upon the merits of this plan. We have no jurisdiction so to do. No one can represent that we have made any determination whatsoever in respect of the plan.

Why were the company officers not aware that work-in-process inventories were over-stated?

Why did the procedure followed by the public accountants fail to uncover this error?

## ALGONQUIN RUBBER COMPANY

Control of Repair and Capital Costs

This case deals with the efforts of top management of a mediumsized company to develop effective controls over the authorization and expenditure of funds for repair costs and capital expenditures.

For some time, Mr. Robert L. French, treasurer of Algonquin Rubber Company, had been closely involved with the financial and general management problems created by a program of expansion and diversification to which the company was committed. The increasing need for cash led to borrowing and financing by various means and made good control over expenditures of all kinds more important than ever before. That the larger number of people involved and the increasing number and variety of activities greatly complicated the problem of control seemed to be of no concern to the other officers of the company, who felt that the present methods of control were adequate. Mr. French, however, was becoming more and more concerned with the specific problem of controlling repair and maintenance costs and capital expenditures. He was, therefore, in January, 1949, reviewing the present system with an eye to its weaknesses and with the objective of charting for himself a course of action which would result in better control over the cost of these activities.

Mr. French was appointed treasurer of Algonquin Rubber Company in October, 1948. Previously he had served the company as assistant to the president, performing many duties that were of considerable importance in the company's operations but did not entail line responsibility. One such assignment was an original study of costs involved in the production of a line of products involving plastics as a rubber substitute. Another was to assist the president in the preparation of a five-year plan of operation for the company. The assignment involved analyzing market prospects by product lines for five years in the future, projecting sales and profits for five years, and balancing capital requirements for future expansion

against the availability of funds from plowed-back profits, noncash expenses, such as depreciation, and additional capital from outside the company.

# **Company History and Products**

Algonquin Rubber Company, located in a medium-size Midwestern city, manufactured for many markets a wide variety of rubber products ranging from multipurpose mechanical rubber products to such products as garden hose and sponge rubber. The company had been organized in 1907 with a capitalization of \$235,000. Its original products, developed in its own research laboratories, were specialized moulded products of which rubber was a basic ingredient. The steady development of new products over the years, always with stress upon high quality and uniformity, had resulted in rapidly expanding markets and sales both in the United States and abroad. Sales had maintained their sharp upward trend during World War II because many of the company's products were needed by the armed forces; and they continued to rise from 1944 to 1948, because the company was not faced with any serious reconversion problems at the end of the war. The following figures, taken from annual reports, present the company's gross sales and net earnings for selected years:

Year	Gross Sales	Net Earnings
1924	\$ 504,696	\$ 24,985
1929	2,215,481	183,064
1934	3,702,419	247,188
1939	5,512,672	642,935
1944	10,873,549	627,634
1948	16,211,246	731,686

A substantial portion of Algonquin's sales was made abroad to customers in most of the countries in the world with the exception of certain Eastern-bloc nations. There were four Algonquin company plants in foreign countries, each organized as a subsidiary company.

In 1949 four plants were in operation in the United States, serving all 48 states. Two of the plants were in a Midwestern city, one in New Jersey, and one in Fresno, California. In early 1949 the total number of employees was approximately 1,375.

Emphasis was placed on expansion of the business through diversification of products and markets, achieved by means of an active research and development organization within the company. Research expenditures were normally 5 per cent of sales.

Algonquin manufactured and sold a wide line of moulded and extruded items of natural and synthetic rubber and plastic material. Founded originally to furnish special moulded rubber products for the nearby automobile industry, the company had expanded its line to include conveyor and transmission belting, industrial and garden hose, and moulded parts for manufacturers of textile and printing machinery. Many of these latter parts were developed by technical personnel of Algonquin Rubber Company and replaced nonrubber or nonplastic materials.

As a result of its experience in the rubber industry and its automotive connections, the company became a major supplier of adhesives for the automobile companies, later branching out to supply rubber-type adhesive to all industries. It prided itself on its ability to supply products specifically engineered for intended end-uses. This line of products had required establishment of two small plants to give service demanded by customers in areas far from the existing plant.

The advent of synthetic rubber and plastics had also resulted in further diversification of the company's line. The company rapidly became a major producer of garden hose manufactured from polyvinyl chloride. With the experience so gained it entered the field of vinyl sheeting for rainwear, shower curtains, and other similar uses. Because it was among the first companies to enter this field it was able to develop an attractive market before the field became highly competitive.

# **Company Organization**

In discussing his company's organization, Mr. French said that formal organization charts were avoided as a result of the policy of Mr. Howard Patten, company president. The reason for this policy, according to Mr. French, was to maintain and strengthen the personal relationship among management leading to informal consultation in the development of decisions. It was also a policy of the president, Mr. French said, to "let the man make his job." Avoidance of formalized lines of authority and rigidly defined duties, it was believed, would allow a man to perform functions in line with his abilities.

The company did have, however, a group of officers concentrating

in certain areas of management. Besides the president, there was an executive vice-president, who had at one time served as treasurer, prior to Mr. French's own predecessor. There were also a vice-president in charge of manufacturing; a vice-president for domestic sales; a vice-president for foreign sales; a vice-president in charge of research; an executive in charge of development, who worked closely with the president; a vice-president who was chief engineer; a vice-president concentrating on the development of polyvinyl chloride sheeting, the most recent addition to the company's line of products; and a vice-president for legal matters. Other top executives included the treasurer, a purchasing officer, and a personnel officer.

The board of directors was made up of fourteen men, of whom six were officers. Mr. French was not a member of the board. Five directors were major executives in manufacturing companies, and three were executives of investment trusts. The latter, however, represented themselves, and not the investment trusts for whom they

worked.

An executive committee, which stemmed from the board of directors, was part of the company's management structure. The committee consisted of the president, the executive vice-president, and four other directors. When Mr. French was appointed treasurer, he became secretary of the executive committee.

#### **Functions of the Treasurer**

The by-laws of Algonquin Rubber Company defined the treasurer's function as follows:

#### Article IV-Officers other than Directors

Section 5—Treasurer—He shall have custody of and responsibility for all monies, books and accounts, subject always to the control of the Board of Directors. He shall sign certificates of stock. He shall deposit in the name of the company all funds of the company which may come into his hands in such bank or banks or other depository as the Board of Directors may indicate. He shall pay out such monies as the business requires, taking proper vouchers therefor. At each Annual Stockholders Meeting, he shall present a full statement of the financial affairs of the company. He shall do and perform all other acts incident to his office. The bonding of the Treasurer for the faithful performance of his duties shall be left to the discretion of the Board of Directors.

<sup>&</sup>lt;sup>1</sup> The company carried a blanket bond covering all its employees. The treasurer was included under this bonding arrangement.

The only other reference to the treasurer in the by-laws of the corporation dealt with his election. On this score, the by-laws ordered the election of the treasurer by the stockholders using a closed ballot. The only other officer so elected was the secretary. Mr. French, as stated previously, took office in October, 1948. For about two months before that time he had worked unofficially under the preceding treasurer to familiarize himself with the functions of the office. Mr. French and his predecessor were close personal friends, who kept each other informed of their respective problems and, in the words of Mr. French, "used each other as consultants." Mr. French said that his friendship with his predecessor, which had started in Washington in 1941, and their frequent discussions of work problems gave him a familiarity with the nature of the treasurer's function at Algonquin Rubber Company before his appointment to that post.

When Mr. French took office, the treasurer's department consisted of the treasurer, two assistant treasurers, and a controller, each with their respective staffs, totaling 45 employees. One of the assistant treasurers concentrated on taxes and problems of foreign financial relations and worked with the controller on accounting methods. The other concerned himself with problems of customer credit, pension plans, and the company's insurance coverage; he was also responsible for the management of the company's cash position, which involved among other duties the preparation of daily cash reports and the transfer and deposit of funds among several domestic banks. The controller was in charge of accounting, which included the preparation and interpretation of monthly statements (profit and loss, balance sheet, cost, sales, etc.) and other reports for management.

There was considerable consultation among the executives in the treasurer's office, according to Mr. French. For example, the assistant treasurer who was concerned with accounting methods and foreign exchange discussed with Mr. French and the controller the problems of making accounting reports more useful and of educating management in the use of these reports.

Although he delegated the specific functions mentioned above to the three major executives in his department, Mr. French kept abreast of their activities. The problem of making accounting reports more useful, for example, was one in which he was particularly interested. He also joined the company's auditors and the assistant treasurer in charge of accounting methods in consideration of the problems that arose in connection with closing the books and the year-end reports. Mr. French examined regularly the daily cash position report and discussed it with the assistant responsible for the company's cash position; the two men together determined any necessary action. An example of action arising out of such a discussion was the purchase of short-term government securities because the company appeared to have an excess of cash for its short-term needs. Another way by which the treasurer kept informed of the work of one of the assistants was through the exchange of copies of all correspondence passing over their respective desks. Mr. French stated that this exchange, carried out on a highly informal basis, was a very useful device for keeping him informed.

At the beginning of each half-year Mr. French presented to the board of directors a projected profit and loss statement for the coming six-month period. Each January he presented for board approval an annual capital expenditures budget, including plant expenditures, which had been worked out by the major executives in consultation. The typical capital expenditures budget included both appropriations for new capital projects and continuing appropriations for capital projects already under way, which thus were reviewed by the board at the beginning of every year. Mr. French also met with the board or the executive committee monthly to present the monthly financial statements, interpret them, and answer questions.

Each week Mr. French and the other department heads attended a meeting conducted by the executive vice-president for the purpose of keeping the department heads informed of the activities in each

department.

Another weekly meeting attended by Mr. French was of the shop order committee, which consisted of the executive vice-president, the treasurer, the head of the development department, the vice-president in charge of manufacturing, the chief engineer, and the vice-presidents in charge of research and sales. According to a policy established earlier in the company's history and applying to all plants in the United States and abroad, all capital expenditures exceeding fifty dollars in cost, and repair and maintenance jobs, other than those of a routine nature, had to be approved by this committee

before the work was undertaken. Cost was defined as material and direct labor expenses, excluding any allocations of overhead.

Parts A and B below describe in some detail the development of a specific capital project and the handling by the shop order committee of requests for repair and maintenance jobs and capital expenditures. These illustrations involve decisions that were long since made, and Mr. French was reviewing them not to determine whether the correct decisions had been reached but to discover if the system of control was adequate to achieve its purpose and also to assist him in discovering by what means he could bring about change if and where indicated.

# A. A CAPITAL PROJECT

For management purposes, the management of Algonquin Rubber Company defined a capital project as a major program involving either the expansion or modernization of facilities for the production of existing lines or the development of equipment for the production of new product lines that had passed through the stages of research and development and were ready for marketing. A capital project was clearly distinguished from a capital equipment purchase of a smaller nature that did not entail a major policy decision on product lines and marketing.

The executives who were immediately involved in a capital project were the president; the executive vice-president; the vice-president for research; the vice-president for engineering, i.e., the chief engineer; the head of development, who reported directly to Mr. Patten; the vice-president in charge of manufacturing; the vice-president in charge of domestic sales; and the treasurer. One of the most important aspects of the managerial process in the development of the capital project was the informal nature of the executives' actions and their relations with one another.

When Mr. French joined the company in 1946, the research department and the development department were investigating the qualities and uses of various plasticizers, which were becoming significant in connection with new products manufactured by the company from both synthetic rubber and plastics. Management visualized that plastic garden hose, vinyl sheeting, and many of Algonquin Rubber Company's other products involving the use of plasticizers would continue to show substantial sales growth.

The company had two alternatives for obtaining plasticizers: (1) it could purchase its needs from existing manufacturers, or (2) it could undertake their manufacture. A comparison of costs of manufacture in the company's own plant and costs of purchasing from outside suppliers would be one factor influencing the choice between the alternatives. A minor consideration was the possibility of added income from the sale of excess quantities of plasticizers if they were manufactured in the Algonquin Company plant and sold to other manufacturers. A further important consideration was the quality of the product when manufactured and controlled in the company's own plant, in

comparison with the quality of the product purchased from outside suppliers. Finally, the problem had to be examined in the light of the company's entire plastics program. Underlying all these factors was an analysis of the future market for their use.

Estimates of the market for the new products using plasticizers, involving the study of such factors as demand, competitive products, and possible expansion, were prepared under the authority of the vice-president in charge of domestic sales. Mr. French's relationship to the project began at this point, when the vice-president in charge of sales discussed the sales estimates with him. Mr. French's function was that of a consultant, and, as meetings were held, he attempted to raise questions concerning the validity of the estimates in order to insure the examination of all pertinent factors. For example, one question he asked was whether consideration had been given to the effects of new techniques in the use of vinyls or the development of new and improved plasticizers.

From the sales estimates for the new products it was possible to obtain a rough estimate of Algonquin company's plasticizer requirements. As a minor factor in the decision, the sales department also prepared estimates on the sales of plasticizers to outside manufacturers, involving the study of the market and competitor's sales, and the projection of an estimate as to what part of the

market Algonquin Rubber Company could reach.

From the sales department's estimates of the demand for the product, both for the company's own use and for sale to other manufacturers, the development department prepared estimates of the cost of manufacturing plasticizers. The final cost estimate for a representative product was between 21 and 25 cents a pound, compared with a cost of buying the material from suppliers of 36 cents a pound. In reaching this estimate the development department included direct costs, such as material and labor, and any additional burdens such as increased electric power or indirect supervision. Allocations of existing burden costs were not made for purposes of this estimate.

Mr. French entered the scene again at this point. When the head of the development department, who had an office adjacent to Mr. French's, wanted to discuss cost estimates, he dropped into Mr. French's office with a few of his engineers, showed him the cost figures, explained them, and asked for comments and questions. Again Mr. French was in a consulting relationship, since he viewed his job as one of raising questions. Although he was not prepared to question the detailed engineering aspects of the cost estimates, he was able to

raise broader questions.

The development department and the research laboratory also investigated the problem of how the quality of plasticizers manufactured at Algonquin Rubber Company would compare with that of plasticizers purchased from suppliers. It was soon discovered that in order to assure the delivery of plasticizers of proper quality standards from outside suppliers, it would be necessary to give them information on the use of the material by Algonquin company. Since it was intended to use plasticizers in certain new products and since this information would be of value to competitors and might leak out through suppliers, it was concluded that, if possible, manufacture of plasticizers should be undertaken at the Algonquin plant.

When the sales and cost estimates were prepared, including the capital costs involved in setting up the manufacture of plasticizers, they were presented to

Mr. Patten, the president. Mr. Patten called in top officials, including Mr. French, to review the sales and cost estimates. Having reviewed these figures previously, Mr. French was prepared to answer questions and clarify the estimates. The next step in reaching the decision involved further meetings of a group consisting of Mr. Patten, the executive vice-president, the vice-president in charge of domestic sales, the executive in charge of development, the vice-president in charge of engineering, and Mr. French. At this particular meeting, Mr. French said that the executives "argued about the project." Questions were aired and different points of view were raised, and the executives decided on a course of action, although there was no formal method

of indicating approval.

With agreement reached by this group, the matter was ready for the consideration of the board of directors as part of the capital expenditures budget for 1948. Mr. Patten, Mr. French, and the development men met to decide how much money should be requested from the board in the form of appropriations to carry out the project. Mr. French, though not a technical man, participated in the discussion as to how much of a safety factor should be included in the sum requested and, since changes to be made affected existing products, whether part of the amount to be expended should be considered to come under appropriations already made. The group then prepared a short memorandum outlining the project, and the sales, costs, and profits estimates. The board had previously been informed on a number of occasions that the manufacture of plasticizers was being considered by various executives and that development work was in process in the laboratories; and the board had already discussed the proposal from many angles. Therefore it was not necessary to present the project in great detail. With Mr. French present to review the figures and answer any questions, the board devoted several regular meetings to a discussion of the project before it finally gave its approval and appropriated \$100,000 to the undertaking.

At this point the engineering and development departments began the preparation of detailed designs for the equipment. As the design work progressed, engineering dockets and shop order forms were prepared for submission through the channels and in the manner described in Part B below.

Throughout the process of reaching the decision to undertake the major capital project of the manufacture of plasticizers, Mr. French had no specific authority of responsibility except as a member of informal committees. He viewed his relationship throughout the course of the discussion as primarily that of a consultant raising pertinent questions and assisting in every way possible.

#### B. SHOP ORDERS

The shop order committee, consisting of the executive vice-president, the treasurer, the head of the development department, the vice-president in charge of manufacturing, and the chief engineer, and the vice-presidents in charge of research and domestic sales met every Monday at 11:30 a.m. Besides the regular members, other executives were called in from time to time when the shop orders under consideration were of particular interest to them. As stated earlier, the function of this committee was to approve, for all plants, all capital expenditures exceeding fifty dollars in cost and repair and maintenance jobs other than those of a routine nature. The total amount of shop order expendi-

tures was in turn controlled by the treasurer, using as a control the allotment of funds in the capital expenditures budget, which was approved by the board annually. The summary of plant expenditures, which was prepared every three months from records kept in the treasurer's office, permitted him to report on progress and to assure the board that the funds appropriated had not been exceeded by actual expenditures. Exhibit 1 gives the six-month summary for the period of January 1—June 30, 1949.

Shop orders were of three types: (1) an expense shop order, (2) an individual capital equipment shop order, and (3) a capital equipment shop

order that was part of a capital project.

Summary of Consolidated Plant Expenditures—January 1—June 30, 1949

(Part of the Over-All Capital Expenditures Budget)

Description	Appropriation		Expended to	Balance
Description	Number	Amount	June 30, 1949	June 30, 1949
Amount * necessary to complete shop orders and projects in process 12/31/48	49A	\$294,800	\$197,665	\$ 97,135
Miscellaneous routine expenditures necessary to maintain existing lines at all plants in 1949	49B	220,000	75,491	144,509
Changes to fire insurance protection system at headquarters requested by fire insurance company	49C	22,000	16,582	5,418
Added equipment at New Jersey plant to meet sales estimates and improve quality	49D	165,000	127,411	37,589
Amount for manufacturing of plasticizers	49E	33,000 \$734,800	\$417,149	33,000 \$317,651

<sup>\*</sup> To clarify company records at the beginning of each year, all unexpended monies appropriated for shop orders in the past year were closed out, and a new amount appropriated to complete those orders initiated but uncompleted in the previous year.

# 1. Expense Shop Order

Expense shop orders were largely maintenance and repair jobs exceeding \$50 in cost. Examples of this type of shop order included the replacement of a bearing on a rubber mill at a cost of about \$200, and the replacement of pipe corroded by acid penetration, at a cost of \$300 or more depending on the length of pipe involved. Another example of an expense shop order was the repair of a building, damaged when a truck backed into it.

These shop orders were considered "run of the mill" orders and usually did not take up a large part of the committee's or Mr. French's time. In many

instances, in fact, Mr. French would approve this type of order when it was presented to him, and send it on for action; he would inform the committee of his action at the next meeting of the group. Mr. French believed review of these orders to be wise because it gave the committee the opportunity to question the method of repair contemplated and to point out certain repair jobs recurring with unusual frequency. The committee could then recommend investigations of a new method of repair to reduce wear.

## 2. Individual Capital Equipment Shop Order

Shop orders of this type were designed to cover the acquisition of items of equipment needed to replace worn-out equipment or added to existing items of a similar nature, but not equipment involving a major expansion of a product line or in any appreciable way affecting the company's product policy. For example, Mr. French and the committee considered a request from the New Jersey plant for a new mixing kettle, estimated to cost \$2,500, which was needed as an addition to existing kettles rather than for replacement purposes. The reason for the request was to enable the plant to mix two different compounds in separate kettles. It was reported by the originator that he had found mixing the different compounds in the same kettle resulted in contamination of the compounds, which further led to a deterioration in the quality of the products involved. The committee approved this request after it had determined that the production quantities of each compound were sufficiently large to warrant separate mixing kettles, and that cost savings would result from the fact that cleaning the kettle would no longer be necessary, since only one product would be mixed in it.

# 3. Capital Equipment Shop Order as Part of a Capital Project

The capital expenditure projects submitted to the board of directors for approval were supported by cost estimates given only in general terms and not in detail.

After the board had approved a project detailed design work and cost estimates were started. As the designs for a major component of a project were completed, shop order requests with estimates were submitted for the approval of the shop order committee.

For example, a request was tendered for an 8,000-gallon tank, estimated to cost \$2,900, to be used in a plant expansion project expected to cost \$100,000. The board of directors' approval for the expenditure of the \$100,000 had already been obtained, and an appropriation had been made for the project. The purposes in approving specific and relatively small parts of a capital expansion already approved by the board of directors, according to Mr. French, were to keep track of the estimated costs of component parts as compared with original estimates prepared before detailed design work was done, and to give executives opportunities to study the methods used in carrying out various projects.

The procedure in getting approval on a shop order consisted of three steps: (1) preparation of an engineering docket form by the department requesting the work; (2) preliminary examination by the engineering department and preparation of a cost estimate; and (3) authorization of the shop order by the shop order committee.

#### EXHIBIT 2

## **Engineering Department Docket**

Requested by <u>R. T. Hoover</u> Dept Dept. Head Approval <u>P. Sweeney</u> Date <u>3-21-49</u>
Date wanted Charge
Building No. <u>54</u> Dept. No. <u>23</u>
Description of Work Desired:
Wax line compound storage kettle No. 52 for natural rubber use, Building 54.

Reasons for Work:

Kettle No. 56, with a capacity of 6,000 lbs., and Nos. 35 and 36, with a capacity of 3,000 lbs. each, are now being used for mixing and storage of natural rubber compound SL15. These tanks have coated interiors to prevent discoloration of the compound. Because of present usage of compound SL15, which amounts to 10,000 lbs. per week, we are forced to use all three kettles listed above. Use of the small kettles 35 and 36, which handle uneconomical batch sizes, represents an operating loss at present production level. Cost studies are available to indicate that this loss approximates \$45 per month.

Available in the same area as the kettles listed above and connected ready for use is kettle No. 52, which has a capacity of 6,000 lbs. However, this kettle is not coated and hence cannot be used with natural rubber compound for fear of staining. The kettle should also be checked to make sure that there are no other parts of materials which, when they came into contact with compound,

might result in discoloration.

WHITE, PINK, AND YELLOW COPIES TO CHIEF ENGINEER'S OFFICE GREEN COPY TO PERSON MAKING REQUEST

## 1. Preparation of the Engineering Docket

The following is quoted from the company's Standard Shop Order Procedure:

The Originator <sup>2</sup> fills in an "Engineering Department Docket" in quadruplicate [see Exhibit 2 for a typical docket form as submitted by an

<sup>&</sup>lt;sup>2</sup> Shop order requests came most frequently from the engineering, manufacturing, research, and development departments. Originators of shop order requests included plant superintendents, who might act at the request of foremen, and research and development engineers.

### **EXHIBIT 2A**

# Engineering Department Docket, Reverse Side

THIS SIDE FOR ENGINEERING DEPARTMENT USE ONLY	Docket No.
Written by Date	Shop Order No
Machine Bldg. No Floor	Charge Account
Eng. Dept. Approval Date	S.O. Transmitted
Dept. Head Approval Date	Total Cost
S.O. Description:	
Reason and Remarks:	
· · · · · · · · · · · · · · · · · · ·	

### Detail

	Labor	Cost
Classification:	Cost	Material
Drafting Time		
Purchase		
Machine Shop		
Mechanics		
Pipefitters		
Carpenters		
Electricians		
Painters		
Laborers		
Totals		

originating office] giving all available data to assist the Engineering Department in obtaining a full understanding of the work proposed. This is to express the ideas of the Originator as fully as possible. When the form is filled in, it must be approved by the Department Head to whom originator of the request is responsible and, wherever possible, show the account to be charged for any costs incurred by the Engineering Department in fulfilling requests.

In cases where emergency repair work was necessary the Standard Shop Order Procedure read as follows:

Work must not be started on an Engineering Department Docket in advance of home office approval, unless an emergency arises which makes it imperative to go ahead before approval can be obtained from the home office. This applies particularly to Shop Order Requests covering maintenance and repair jobs at Outside Plants and Subsidiary Company factories. Shop Orders covering Plant Additions or Replacements should not be started before approval is obtained from headquarters.<sup>3</sup>

# 2. Approval by Engineering Department and Cost Estimate

The Standard Shop Order Procedure described as follows the procedure for obtaining approval and cost estimates from the engineering department:

Upon receipt of the three Docket copies [submitted by originator, who kept fourth copy] the Engineering Department will, unless otherwise directed, start work on the estimate in the same order of priority as received. A complete estimate [see Exhibit 3] will be prepared on the basis of the Engineering Department's understanding of the job requested and the reverse side of the request form will be filled in by the Engineering Department. [See Exhibit 2A for the reverse side of the Docket form.] This will show the job details on which the estimate has been based and will be in as much detail as possible or necessary for the Originator or Department Head to understand fully the proposed work.

Two copies of the Docket will then be returned by the Engineering Department to the Department Head who originated the request for study and action. If the job has been properly outlined by the Engineering Department and it is desired that a Shop Order be instituted, the Department Head will

sign his approval in space provided on the reverse side of the form.

The Department Head after approving the Docket returns two copies to the Engineering Department.

# 3. Approval by the Shop Order Committee

The engineering department filled out the shop order form [see Exhibit 4 for an authorized shop order, and Exhibit 4A for reverse side] and one copy of the docket was forwarded to Mr. French. All dockets had to be in Mr. French's hands by Friday afternoon in order to be considered at the following Monday meeting of the shop order committee.

Mr. French personally reviewed all the shop orders to be studied by the full committee, in order to familiarize himself with the orders so that he could raise questions for the committee's consideration. The time taken for this review

<sup>&</sup>lt;sup>3</sup> In the overseas subsidiaries, plant managers were permitted to initiate the work called for by their shop orders without prior approval where they felt such action necessary; they were, however, expected to inform the head office as soon as possible. Mr. French and the shop order committee were thus able to review such actions periodically to ascertain the number of this type of shop orders and the relationship between estimated and actual costs.

<sup>&</sup>lt;sup>4</sup> The chief engineer and the department head together might give a request special priority.

# EXHIBIT 3

# Estimate Sheet

	No.	der No.	). I	Pages			By Date		
	Docket No.	Shop Order No.	Page No.	of 1		red	Date		
	Ī	ĺ	1	1	i	Ordered	Reg. No.		
i.	2 # 52						Source		
	storage kettle	. 54			Date	st	Labor Material Total Total	\$ \$ \$ 923 \$ \$ 923 \$ \$ 157	0/20
	punodu	se, Bldg.			Ω 	abor Co	Labor   Total	\$ 40 70 25 25 25 8160	
	Vax line coi	for natural rubber use, Bldg. 54			C.S	Material or Labor Cost	Rate or Unit	1.70 1.60 1.25 1.45	
	Description Wax line compound storage kettle #52	for natur			Estimated by C.S	M	Hours or Quantity	23.5 43.75 20.00 17.2	
Div.	Time	Purchase Machine Shop	Mechanics Pipefitters	Carpenters Electricians			Description	Forward Boston pipe—tie & flanges Greene rubber—Strauss valve Glover coating—coat agitator assembly, manhole cover, & touch up work after assembly Mechanics Pipefitter Wire & Brush Painters Wax	1 otal

### EXHIBIT 4

# Authorized Shop Order

Algonquin Rubber Company	Division Main Plant	S. O. No. 2414
Related Machine Orders and Expense Job Orders	Recommended by Date R. T. Hoover 3-21-49	Docket No. 4086
	Authorized by Date R. L. French 3-28-49	Charge <u>X44</u> 38
	Date Completed	

# General Description of Work to Be Done

Wax line compound storage kettle #52 for natural rubber use, Building #54. The proposed work is similar to that recently done on Kettle #56, or S.O. 2342, with a final cost of \$365.59. The agitator assembly is to be wire brushed and wax coated, and the bottom valve is to be replaced with a rubber-lined diaphragm valve.

	Reasons for t	Cost Summary			
(1):	r Cost reduction—annual sav See below	vings a	are estimated to be \$	Estimated cost (see over)	375.00
(2)	Safety	(3)	Improved working conditions	Actual cost	
(4)	Preventive maintenance	(5)	Repairs to maintain production	(see over)	
(6)	Research or experimental	(7)	Productive capacity to meet sales	Gain loss	
(8)	Other		requirements		

We are presently using 42,000 lbs/month of SL15 compound mixed in one 6000 lb. and two 3000 lb. kettles. Kettle 52 is already connected, but it is necessary to coat the tank to prevent staining of the compound. If we substitute 6000 lb. batches for 2650 lb. batches, the maximum possible in the small kettles, labor saving at present production is \$36/month. In addition to this saving, we gain in flexibility by having small tanks available for new rubber compounds for which requirements are small.

	2650 lbs. batch	6000 lbs. batch
Standard minutes of labor per batch	450	550
Cost at 1.40/hr.	1050	12.83
Cost per lb.	$.396 \phi$	$.214\phi$

Savings basis 20,000 lbs. now mixed in small kettles \$36/month

### Special Instructions and Comments

Estimated cost of replacement item covered by this Shop Order

Date of purchase ( ) and original cost of item to be removed from plant, if any

Estimated Increase (Black) Decrease (Red) in Plant Account

### EXHIBIT 4A

### Authorized Shop Order (Reverse Side)

### Details of Cost Estimate and Actual Cost Total Labor Hour Materials Total Labor Materials Classification Actual Estimates Estimates | Estimates | Actual Actual Cost 375.00 128.97243.64 372.61

White Copy to Acct. Dept. after Approval. Yellow Copy to Branch, or Dept. 71. Pink Copy to Chief Engineer's Office.

Green Copy to Dept.—Plant Acct. Blue Copy to Person Making Request.

NOTE: This form must be used to secure authorization of any construction, purchases, for plant account, or expense jobs estimated to cost more than \$50.00.

ranged from one hour at the low point of shop order requests (about four or five) to a half-day at the peak (thirty to thirty-five shop orders).

During a committee meeting, which might last up to about three-quarters of an hour, each order would be read by a representative of the originator and questions would be raised; a discussion might ensue on the order; and then approval would be voted or denied. Actually, Mr. French said, there were many routine shop order requests which were passed upon briefly and in a matter of fact manner as a result of the knowledge accumulated from past experience as to what was a routine job, and what needed careful consideration.

Few shop order requests that reached the committee were rejected, according to Mr. French. As stated previously, the requests had to be approved by the particular departments involved, and at times approval was denied at this level. Mr. French said that the committee seldom denied a shop order request outright. Rejection usually took the form of a return for additional data, or for the study of alternatives suggested at the committee meeting.

For example, Mr. French, in conjunction with the engineering department, instigated a shop order request for additional meters to measure electric and steam usage by departments, the purpose of the meters being for cost comparisons and control. The committee referred the request back to the engineering department for further consideration, and asked the department to study the possibility of using movable meters, which could be transferred from one department to another, instead of permanent meters in all departments. The use of movable meters, if feasible, would require fewer meters and result in savings in cash outlay. Although this shop order request was not approved, it was not flatly denied. Mr. French believed that it would be approved after the engineering department had completed its study of the alternative suggested by the committee and had presented the facts to the committee.

A type of rejection that occurred from time to time was on a request for non-productive equipment. The committee sometimes denied such requests on the grounds that the existing equipment was adequate and the expense involved was therefore unwarranted.

After the committee approved the orders, Mr. French signed the shop order form in the designated space. He then returned all copies of the approved shop order to the engineering department, where a shop order number was assigned. That department would forward the blue copy to the originator of the request, the yellow copy to the foreman in charge of the project to initiate the work, the green to the plant accountant, the white to the accounting records

staff, and retain the pink copy in the office of the chief engineer.

The accounting department, after receiving the white copy of the shop order, would set up a ledger card under the appropriate shop order number. Later, as the foreman in charge of the work accumulated and forwarded time cards for labor and charges for materials each week, the ledger card would be used to list the pertinent charges. Upon completion of the work, the foreman would forward all remaining cost data. His yellow copy of the shop order was sent to the engineering department, which inspected the data and forwarded it to the accounting department. The latter department would in turn complete the ledger card and transmit it to the engineering department for study as to the inclusion of all pertinent costs. If the engineering department agreed with the final tabulation of costs, the ledger card would be closed out by the accounting department and forwarded to the plant accountant.

At the end of each month, all shop order costs, for both complete and incomplete orders, would be sent to the plant accountant. He then tabulated them and forwarded the appropriate information to the treasurer's office. Thus

Mr. French received the data on the status of shop orders each month.

Mr. French regarded the shop order procedure as useful for a number of reasons. It was a valuable device for giving him and the other members of the committee the opportunity to raise questions concerning the expenditure of company funds. It also served to put pressure on the engineering department to make careful cost estimates and on all parties involved to keep actual costs close to estimates. Mr. French kept in his desk a book in which costs for shop orders were entered and their totals checked against over-all shop order appropriations. In reviewing this book and the monthly report from the accounting department, Mr. French frequently could spot cases where actual costs were running more than the allowable ten per cent ahead of estimated costs; and he could then raise questions that would lead to more careful estimating in the future, and to closer control of actual costs. In addition to the records maintained in his own office, Mr. French received monthly a copy of a summary engineering report [see Exhibit 5] showing monthly tabulations of shop order costs and unexpended funds for the home plant. With either this report or the accounting department data, Mr. French could investigate outstanding problems through the accounting or engineering departments. Mr. French also regarded the shop order system as an effective communication device, which enabled him and the other members of the committee to keep abreast of activities ranging from small maintenance jobs to major plant expansion programs.

In January, 1949, Mr. French was considering the possibility of some changes in the shop order procedure. One objective would be to expedite the reporting of excess costs, that is, costs more than ten per cent above the estimates, on work

# EXHIBIT 5 Shop Order Report \*—July 12, 1949

The accompanying June 30 reports show summary tables of shop orders as follows: Under-Runs Net Total Over-Runs Schedule A-Home plant shop orders \$ 6,730.62 \$ 3,775.62\*\* \$ 2,975.00 closed to June Schedule B-Cumulative effect of 50,274.30 50,274.30 additional credits of \$526.63\*\* on shop orders closed prior to Tune Schedule C-Home plant shop orders Estimated Still to Be Expended in process, 6/30/49: Cost Amount Percentage Plant shop orders \*\*\* \$27,059.59 32.3% \$83,820 Expense shop orders 49,459 29,497.94 59.6% EstimatedOver-Runs Cost Amount Percentage \$ 3,648.65\*\* 8.8%\*\* Plant shop orders \$41,616 Expense shop orders 1,309.10\*\* 18.0%\*\* 7,265

\*\* Figures in red.

authorized by a shop order. Though he received actual cost data each month, it was difficult for him to ascertain how much of an individual shop order's work had been completed, with the result that an order might actually exceed its estimated cost by the time of its completion. Mr. French was wondering whether any action on his part might resolve this problem. He also was giving some consideration to raising the fifty-dollar expense limit in order to allow the individual departments to spend larger sums without first getting the approval of the shop order committee.

Mr. French was, naturally, concerned with a great many other things besides the control of repair and capital costs. He was, moreover, aware that the principal executives involved were of the opinion that the system provided adequate control. He himself felt it to be a valuable management tool in relation to the

time it required and did not envisage any major changes.

Does the shop order Committee exercise effective control? If so, in what way?

What changes, if any, would you recommend in the company's system of control over repair costs and capital expenditures?

<sup>\*</sup> This report covers only shop orders in the home plant. The treasurer's own records, however, made similar data available on shop orders in other plants and in the subsidiaries.

<sup>\*\*\* &</sup>quot;Plant shop orders," as used here, represented a combination of the individual capital equipment shop orders and the capital equipment shop orders that were parts of a capital project.

# case 11

# STRATFORD FOODS, INCORPORATED (II)

Establishing a Program of Internal Audit

This case is primarily descriptive of the organization and operation of an internal audit department in a large company. This case can be used in sequence with Richland Foods and Northern Alliance, all dealing with internal audit of Stratford Foods and subsidiaries.

Stratford Foods was a large producer and distributor of nationally advertised food products. Sales for 1949 were over \$300,000,000; assets topped \$100,000,000. Stratford had plants in ten states and sales offices in important cities all over the world. The company was organized on a divisional basis with line responsibility residing in division heads. Coordination of the functional activities (manufacturing, sales, finance, etc.) was the responsibility of staff men at the home office in New York City.

# Internal Auditing

The internal auditing department was responsible directly to the controller and, indirectly, to the audit committee of the board of directors. The department, which had been created by order of the board, served as the "eyes and ears" of top management. The cost of operating the department was approximately \$100,000 per year. Mr. Albert Sauer, head of the department, had a staff consisting of an assistant and four senior, four semi-senior, and eight junior accountants.

### **Audit Procedure**

The procedure followed by the auditing department in making an internal audit was in many respects similar to that employed in independent audits, except that the internal audit was often broader in scope.

The first step in the audit program was the preparation of a schedule of plant locations to be audited. The board, when establishing

the internal audit department, set down two rules to guide the department in this phase:

- a) Raw material storage audits were to be made each year.
- b) Manufacturing and other audits were to be made once every fifteen months.

These internal audits were, of course, in addition to the regular audits performed by Stratford's independent public auditors. They were generally conducted on a surprise basis and in conformity with a pre-established audit program.

Each audit was in the charge of a senior accountant who had assigned to him a team of two to five men depending on the size of the job to be done. Audits were made by function rather than by division. The four functional audit programs were:

- 1. Traffic
- 2. Raw Materials Storage
- 3. Plant and Sales
- 4. Special Service

Since Stratford consisted of eighteen semi-autonomous divisional units, each of which was quite large, it was not considered feasible for an internal audit to cover a whole division. Instead, geographical location comprised the basis for audits. For example, there was a processing plant, a sales office, and a storage warehouse in St. Louis, all of which were part of the "mid-central" geographical area, and would, therefore, be included in the same internal audit.

Although a general audit program is prepared for each of the four functional areas mentioned above, the senior auditor in charge on the job is expected to use his own judgment in adopting the general audit program to any given audit situation.

During the auditing team's visits to the various plants, factual materials relating to the internal audit system were collected. Opinions expressed by the auditors were usually limited to those that could be documented with such factual materials.

Upon completion of the audit, the senior auditor prepared a manuscript of his findings, including material relative to the scope of the audit and the degree to which the audited units had adhered to the company's policies. This report contained all the pertinent facts, and was supported by detailed audit work papers.

The audit report was then discussed with the operating management and controller of the division being audited in order that the views of those parties might be incorporated in the report. (Mr. Sauer, head of the company's Internal Auditing Department, made it a point to be present for the review at some of the more important audit locations.) Although the report was intended to present the audit findings in as factual a manner as possible, it did include comments on areas in which, in the auditors' opinions, the plant audited had either fallen below the prescribed standards and needed correction, or, at the other extreme, had done an outstanding job. In case the division controller and the auditor failed to agree on a particular point, the matter of controversy was included in the audit report along with the opposing points of view and the auditors' recommendations.

The report was then presented to Mr. Sauer at the home office, who reviewed the working papers and audit report, assured himself that they were in order, and consulted functional heads in the home office when such action seemed warranted. The final report issued, therefore, contained all the pertinent facts as well as opposing points of view on action indicated.

Finally two reports were prepared based upon the audit report and the discussions. The first report was a summary of the final report and highlighted the auditor's findings at the plant visited. The

second report was a detailed supporting document.

The summarized report, which was issued within fourteen days of completion of the audit, was presented to the president, chairman of the board, and other interested members of the central executive staff. The detailed reports were sent to interested department heads in the New York office, and to the division controller; detailed reports were usually issued within six weeks of the completion of the audit.

The reports for the division controller were routed through the methods department. A letter of transmittal to the division bearing the signature of Mr. Martin Breen, head of the methods department, was prepared by him in conjunction with the auditing department. This letter commented upon any unusual aspects of the audit and was really the first step in the audit follow-up procedure. If any glaring needs for correction were disclosed in the audit report which demanded the attention of some functional executive, these errors

were then discussed jointly by the New York department head and the auditing department. These two departments cooperated in preparing a letter to the person responsible in order to facilitate followups. The division controller was expected to initiate action, to correct any faults described in the audit report, and report back to the central office as to how successful he had been in correcting the weakness disclosed by the audit report.

In commenting on the role of the internal auditing department, Mr. Sauer, the department head, commented as follows.

The auditing department never acts upon its findings on its own. The methods department is responsible for follow-ups, although the auditing department is kept informed of all developments. It has authority to question the follow-up pertaining to specific points when it is not satisfied, and actually maintains the follow-up correspondence files (for the benefit of subsequent auditors). The reason the auditing department does not participate directly in the audit follow-up is that to do so would place it in a position of being both patrolman and judge. The rules to be followed are set up by the methods department in standard procedure manuals. (The auditing department, and others, are consulted concerning new procedures, and although the auditing department thus gives tacit approval of such procedures before they are made effective, it reserves the right to change opinions after seeing the procedures in action.) The auditing department merely audits to assure itself and the company that these rules are being followed or, on the other hand, that the rules are unworkable or otherwise not proper and merit modification.

The company's audit follow-up procedure was highly flexible. When a point came under discussion, the particular circumstances surrounding the case were carefully weighed. The methods department was always prepared to change its procedures if it found they did not fit the circumstances.

Copies of the internal audit reports were also made available to the company's public auditors. Although outside auditors had nothing to do with the framing and performing of the internal audit, they did provide an independent check on the scope, accuracy, and accomplishments of the internal audit department.

The internal audit department reported to the board of directors once each year describing its work during the year, and presenting in summary form its findings and comments.

# Purpose of the Internal Audit

The purpose or function of the internal audit department was briefly mentioned in an earlier section of this case. The ruling set

down by the board of directors called upon the internal audit department to check directly the adequacy of the system of internal control. Specifically, the board required that "... the audit program be designed to ascertain that the assets are being conserved and protected, that approved procedures are being followed, and that adequate internal checks are being applied. The application of the audit program should provide that accounting procedures at the offices audited are generally in order and that their performance is fundamentally accurate. The investigation of the adequacy of internal control should include (1) a determination that the system of internal control is adequate and will minimize errors and defalcations, and (2) suitable test-checks be made to determine that the system is being maintained. In the presentation of audit findings the audit department should differentiate insofar as possible between errors in performance (judgment) and deficiencies in the accounting system, and the relationship of the two."

The scope of Stratford's internal audit was much greater than that of the audit regularly performed by the company's independent auditors. The internal audit report included notes on personnel, on sales, manufacturing, and finance, and on organizational problems. Emphasis was placed on internal control and adherence to companywide policies. The reports themselves, although written for those who were already fairly familiar with the company's accounting procedures, were presented in as generally meaningful a form as possible; percentages were freely used, and comparative data were provided, as among various divisions as well as for different years.

The purpose of the auditing department was not considered to be uncovering illicit acts. It was more or less assumed that all departments would attempt to follow the policies as described in the procedures manuals, and that any deviations were made for legitimate purposes, or due to natural inadvertency. Audit programs were written by Mr. Sauer and were based upon general company policies as described in the procedures manuals and upon generally accepted accounting principles.

How should the top management of Stratford go about deciding how much to spend for internal auditing?

# RICHLAND CORPORATION

# Follow-up of an Internal Audit

This case deals with the purposes and objectives of procedures used by a parent company in following up the submission of an internal audit report on a subsidiary corporation.

The Richland Corporation, a division (wholly owned subsidiary) of Stratford Foods, Inc., produced and sold food products throughout eastern Canada. In line with the parent company's policies, an internal audit was performed for this division as of November 30, 1945; the next such audit was made at September 30, 1947. The first audit included the years 1943, 1944, and 1945; the second covered the years 1946 and 1947. War pressures had precluded more frequent audits during this period. The pertinent rulings in the company's procedures manuals, and the audit programs relating to the accounts examined and reported in the audits referred to above, are presented in Exhibit 1.

The reports of these two audits, which are reproduced below, are restricted to certain substandard phases of operations. The follow-up work which was accomplished between the two audits is described immediately following the report dated January 28, 1946. Both reports deal with the food packaging plant located in London, Ontario. These audit reports were sent to both the Richland and Stratford chief executives. Reports such as these, generally referred to as "short" reports, were used by Stratford's chief executives as a means of maintaining contact with its various subsidiaries and divisions as well as a routine review of the accounting operations. Typically, action was taken by the Stratford management as a result of such audit reports only in cases where items of material consequence were disclosed.

A full "long" report was always, as a matter of policy, submitted to the controller of the division concerned. It was his responsibility to supervise the accounting staff of the audited plant in initiating any corrective action indicated by the audit report. The audits included investigation of all "significant factors" in the plants operations. Those areas not mentioned in the reports which follow were, in these cases, considered satisfactory and consequently received a minimum of attention from the auditors and management.

An organization chart for Stratford Foods, Inc., is reproduced in Exhibit 2.

# AUDIT REPORT OF THE LONDON, ONTARIO, PACKAGING PLANT

November 30, 1945

From: Auditing Department

January 28, 1946

Stratford Foods, Inc. New York, New York

# Gentlemen:

The following report presents the results of an audit of the mill and sales operations of the London, Ontario, office of the Richland Division of Stratford Foods, Inc., for the period from February 28, 1943, to November 30, 1945.

# Scope of Audit

The mill stocks of finished products and ingredients at London and the stocks at the branch warehouse in Hamilton were counted, and test-counts were made of the mill stocks of empty packages. The wage payroll checks for one pay period were distributed, the employees being identified insofar as possible. Test-checks and examinations were conducted of the records kept and the operations performed during the audit period, and the financial statement accounts on which the primary or subsidiary records were kept at London were analyzed and investigated as of November 30, 1945, the balances being checked by correspondence to the general ledger records maintained by the divisional office.

Traffic operations were reviewed briefly. No review was made of purchasing operations and accounts.

The results of the audit were reviewed in detail with the local management.

# **Changes in Personnel and Organization**

Effective July 1, 1945, Mr. A. L. Smith, formerly a member of the accounting staff at San Francisco, was transferred to London as office manager, replacing Mr. A. M. Peters, who was appointed chief accountant for the West Division. In January, 1944, Mr. L. M. Untea, formerly of the accounting staff at San Francisco, replaced Mr. Smith as office manager, the latter being transferred to a similar position at Portland.

Mr. M. P. Cogan, formerly plant superintendent of the Franconia soup plant, was assigned the newly created position of assistant plant superintendent at London on April 1, 1944.

Mr. R. A. Brant was transferred from the London accounting department on January 18, 1945, to the branch warehouse at Hamilton as office manager, replacing Mr. B. Q. Furst, who left the company.

On approximately June 15, 1945, Mr. S. Abrams, formerly a member of the London accounting staff, was appointed to the position of London office assistant for the coffee sales manager.

Upon his return from military service in April, 1945, Mr. H. A. Prince replaced Mr. Golden as personnel supervisor, the latter being transferred to Spokane as milling superintendent.

Effective September 24, 1945, Mr. F. T. Axlerod, former elevator foreman, was appointed elevator superintendent, replacing Mr. P. K. Rogers, who terminated his employment with the company.

# **Delivery and Production Statistics**

Comparative production statistics for the London mill and delivery statistics for the London-Hamilton grocery products activity for the eleven months ended November 30, 1944, and November 30, 1945, and for the fiscal years ended July 31, 1944, and July 31, 1945, are presented on page 108.

# **General Condition of Office**

Although some of the accounting continued to be handled in a generally satisfactory manner and certain of the exceptions previously reported had been effectively eliminated, some previously reported weaknesses were still in evidence and new exceptions in rather important phases of the accounting were disclosed to indicate a poor over-all performance. Exceptions noted in those phases of the

work dealing with mill stocks and mill payroll indicated that increased supervision of certain accounting details would be desirable, and the need for securing more accurate and complete original production data was indicated by the noted errors and omissions in the reports of such information and by the over-all accounting results reported for mill stocks.

Remedial action was taken during the audit to eliminate several of the weaknesses noted, and in other instances measures were being considered to effect the needed improvements at the completion of the audit.

	Eleven Mo	Eleven Months Ended		
	Nov. 30, 1945	Nov. 30, 1944	(—) Decrease	
Production—London:				
Vegetables (lbs.)	2,300,000	2,360,000	- 60,300	
Fruits (lbs.)	746,100	857,500	-111,400	
Other Canned Goods (lbs.)	742,000	1,087,900	-345,900	
Deliveries-London & Hamilton	:			
Coffee (lbs.)	92,000	99,000	-7,000	
Package Foods (lbs.)	240,000	270,000	- 30,000	

	Fiscal Ye	Increase or	
	Jul. 31, 1945	Jul. 31, 1944	(—) Decrease
Production—London: Vegetables (lbs.) Fruits (lbs.) Other Canned Goods (lbs.)	3,000,000 1,078,000 1,344,200	2,500,000 906,500 1,059,000	500,000 171,500 285,200
Deliveries—London & Hamilton: Coffee (lbs.) Package Foods (lbs.)	120,500 350,000	121,200 320,000	-700 30,000

# **Principal Points and Those Requiring Improvement**

# 1. Plant Payroll (Packaging)

Fifty-five inaccuracies were disclosed in the auditors' check of the plant payroll for two weekly periods, twenty-eight in the computations for the week ending November 18 and twenty-seven for that ending November 25, 1945. Included were twelve errors in computing shift differentials, eight inaccuracies in computing half-time rates, ten errors in computing hours worked, thirteen errors from

using obsolete wage rates, four errors from using faulty wage rates, and eight miscellaneous inaccuracies. In addition, subsequent follow-up to determine whether the above inaccuracies had been corrected disclosed six instances in which additional errors had been made in effecting the corrections.

The independent check of payroll factors was not sufficiently complete in that the check of the payroll clerk's work included only a verification of basic wage rates (from the clerk's rate books, which was often not in a current condition). However, what with basic rates and one or more special job rates possible, two possible shift differential rates applying to each, and each hourly rate possibly calling for a half-time rate to cover overtime hours, money amounts on time cards often represented the aggregate of five or six (or more) combinations of hours times rates. Of such combinations, the accuracy of none of the hours and of only basic rates was proved by the existing independent check.

Periodic independent distributions of payroll checks by an administrative employee, as required by the Manual of Personnel Procedure, were not being made.

The auditors were assured that the necessary remedial measures would be taken to improve the original accuracy of payroll work and to broaden the scope of the independent check of payroll factors. Periodic administrative distributions of payroll checks were to be resumed.

## 2. Mill Stocks

Individual and net differences disclosed by the auditors' count and those experienced in prior months were unduly large.

Deficiencies in the reporting of daily production activity were, in some instances, proved to have resulted in inaccurate production data; included in such deficiencies were (1) the failure to register certain production, particularly of large sizes, (2) improperly indicating register readings—by showing opening and closing readings for entire shifts, etc., rather than for each brand and size—for certain production, (3) violating manual-prescribed procedures for handling sacks broken in packing, (4) having packing foremen prepare packers' tallies (to some extent from daily packing orders rather than from actual register readings) and fed-in reports rather than requiring they be prepared by the packer or feed-in man per-

forming the operation, and (5) employing, to some extent, a practice of adding to or altering original production reports (principally fed-in reports) to obviate stock differences being experienced.

Gross inadequacies in the count-and-investigate procedures were apparent, stemming largely from a lack of cooperation between the manufacturing department and administrative departments, principally as represented by the stock counter and stock ledger clerk, respectively. A lack of personal contact between these employees—one of the lesser weaknesses arising from the counter's being a manufacturing department employee—contributed to this lack of cooperation. Extremely large count differences were often not sought through recounts, principally due to the general lateness in making the original count comparisons available to the stock counter. Because some confusion appeared to exist as to whose was the responsibility for investigating count differences, the resulting measure of investigation was entirely too meager to be considered effective. Extremely large adjustments resulted.

Two manufacturing adjustments were noted to have been prepared by the stock counter in his capacity as an operating employee; one of these corrected for a fictitious fed-in report admittedly prepared by the stock counter to eliminate a count difference. One other manufacturing adjustment was noted to have been altered to cover

an existing count shortage.

Considerable improvement would be necessary to raise the level of accounting for mill stocks to a satisfactory level. Proposed remedial measures were outlined in connection with the audit review, however, and assurances given that such measures would be adopted as rapidly as conditions permitted.

As of November 30, 1945, the number of unfilled orders was large but no difficulty was anticipated in effecting delivery of all contracts.

The auditors wish to express their appreciation of the cooperation and courtesies extended them by the personnel of the London and San Francisco offices during the audit.

Respectfully submitted,

A. B. Norman

F. M. Shelby

J. B. CORMACK

## DETAILED AUDIT REPORT

# 1. Plant Payroll

# Principal Weaknesses or Exceptions

Twenty-eight and twenty-seven inaccuracies, respectively, were disclosed in the auditors' review of the payrolls of November 18 and November 25, 1945. Efforts to correct these inaccuracies resulted in six additional errors.

The independent check of payroll factors was incomplete, in that many of the hour and rate factors used in the actual computations were not covered, and ineffective, in that some noted inaccuracies had been missed.

Delays in posting changes to the rate records book resulted in numerous mispayments.

### Remarks

Periodic, independent distributions of payroll checks by an administrative employee, as required by provisions of the Manual of Personnel Procedure, were not being made.

## 2. Mill Stocks

# Principal Weaknesses or Exceptions

Differences disclosed by the auditors' count and those experienced in prior months were unduly large.

Deficiencies in the reporting of daily production activity—including failure to register certain production, employing improper methods in preparing packers' and fed-in tallies, and making some unauthorized alterations in original production reports—coupled with gross inadequacies in the count-and-investigate procedures, and with weaknesses attending the counter's being an operating employee, contributed to a decidedly unsatisfactory condition disclosed by the audit and, materially, to the size of the differences being experienced.

### Remarks

Some of the adverse disclosures of the audit appeared to have stemmed from a lack of cooperation between the manufacturing and administrative departments, particularly as represented by the stock counter and stock ledger clerk. Some of the violations noted had been reported in previous audits.

### **Detailed Comments**

### Mill Stocks

A decidedly unsatisfactory condition in the control over mill stocks, involving deficiencies in the reporting of daily stock activity, coupled with an ineffectiveness in the count-and-investigate procedures, was disclosed by the auditors' review.

Some of the auditors' exceptions represented basic violations of standard stock control procedures; some had been reported before in connection with previous audits. The exceptions noted are presented in more detail in the following topical paragraphs:

# Results of Auditors' Count

Both the individual differences by brand and size and the net difference necessary to adjust book balances to agree with the auditors' count (as of November 30, 1945) were large. Included as individual differences, for example, were shortages of 371–25's and 350–5's of linseed oil, 103–10's and 70–5's of olive oil, 27–100's of Mix K, 18–100's of Mix L, 23–100's of unital, and 44–100's of Mix M, and overages of 98–25's of olive oil, 186–25's of Grade C, 18–100's of canned peas, and 31–100's of Mix F. In total, the auditors' count disclosed a net shortage of 207 pounds of oils and a net overage of 23 pounds of vegetables.

# Extent of Previous Adjustments

Previous individual monthly adjustments by brand and size were large, including, for example, such differences as those presented in the tabulation on page 113.

In general, the size and extent of the differences being experienced appeared to be abnormally high in relation to the size of the mill and these differences evidenced weakness in the control over the mill stocks.

Brand	Size	Quantity	Date
Oils	5	-1,130	March, 1945
Oils	25	-382	January, 1945
Oils	10	-420	July, 1945
Grade C	25	500	May, 1945
Olive Oils	25	-162	January, 1945
Olive Oils	25	-116	October, 1945
Mix G	100	-59	August, 1945
Marva	100	63	March, 1945
Mespa	100	-42	June, 1945
Canned Beets	100	71	February, 1945
Coffee	100	100	April, 1945
Tea	100	52	April, 1945

# Deficiencies in Recording Production of One and Three Pound Sizes of Coffee

The production facilities at the London mill provided for the packout of 1's and 3's on both the third and first floors of the mill. Third-floor facilities included a pneumatic packer, interchangeable between the two sizes, coupled with a tape sealer and a case and/or bale sealer. All tape sealed bags of these sizes were packed out through this equipment. First-floor equipment included two conventional packers for the production of 3's (or larger) tie-type bags. Production of 3's on this floor was seldom baled or cased, and, if so, it was strictly a manual operation.

The pneumatic packer on the third floor was equipped with one register (sometimes a second register was provided, it was stated) which was used as an order register, and the coupled case and/or bale sealer was equipped with both a cumulative and an order register. Under this arrangement, no cumulative packing register readings were available to support production of loose 1's and 3's (quantities reported were stated to have been obtained from the one or two order registers on the packer) or to serve as a check of production tallied by the case and/or bale sealer. In addition, packing tallies covering cased or baled production sometimes indicated only opening and closing cumulative sealer register readings, despite more than one brand having been packed off during the run. The auditors' recommendations for obviating the deficiencies in recording the third-floor pack-out of these sizes included (1) the providing of a cumulative packing register for supporting the production of loose 1's and 3's and for checking the production of baled or cased

pack-out and (2) the indicating of cumulative register readings on tallies for each brand and size.

When the two conventional packers on the first floor, used for packing tie-type 3's (and larger), were examined by the auditors, each was noted to be equipped with two registers; however, only one register was attached on one packer, and neither register was attached to the other. Although the plant superintendent believed that no packer would ever be operated without at least one register being operative, it appeared that cumulative registers were nevertheless not employed since reported production of tie-type bags was customarily not supported by tallied register readings. The auditors recommended that cumulative registers be provided and the readings thereof be required to support production of tie-type 3's.

# Follow-up to the Audit of November 30, 1945

The follow-up to the November 1945 audit report, which described a generally unsatisfactory condition, started with the chief plant accountant at London writing to Richland's controller in Toronto. The chief accountant had been called upon to explain the existence of the conditions uncovered by the report. In a letter dated March 3, 1946, the chief accountant stated:

# 1. Plant Payroll—Plant

At London, Manufacturing Department employees prepare the plant payroll. This harks back to the days when manufacturing was a separate "division," and the arrangement has survived several audits. Audit criticism cannot be pointed at the administrative office for this operation. It should be noted that a "good" rating was given to the "Mill Payroll," an operation performed in the administrative office.

Înability to take trained personnel away from essential duties was the chief reason independent payroll check distribution was not made by the office.

### 2. Mill Stocks

Five listed criticisms were of functions or practices of the manufacturing department and represented, in part, procedures allowed in previous audits because of local conditions. Irregularities, when called to manufacturing department's attention, were not given cooperative treatment, and improvement was not effected. Lateness in returning original count comparisons was almost entirely proportional to lateness in receiving counts from the manufacturing department. General explanation for lack of re-counts was that the stock counter was needed elsewhere in the plant. No manufacturing adjustments were issued to adjust stock counts with my approval or with

adequate, legitimate explanation. Administrative awareness of a poor condition here is best indicated by the fact that I spoke to you of it a number of times and also called the attention of the auditing department to our difficulties.

On May 28, 1946, the controller of Stratford Foods, Inc., sent the following comments to the controller of the Richland division. Speaking of the unsatisfactory condition of the London plant, he said:

It is apparent from the report and from the letters we have seen to date relative to this audit that a number of factors contributed to this condition, the principal ones being high personnel turnover in recent years, somewhat ineffective distribution of the work between the administrative and manufacturing departments, absence of full cooperation between departments, and, behind all of this, a not too satisfactory physical layout to encourage the highest degree of efficiency.

# Organization

Up until the time that Mr. Jones was made office manager at London on June 15, 1945, it had been our impression that there had been something lacking in the cooperation between the administrative office and the two plants, evidenced principally by the resistance of the plant superintendents to suggestions relating to accounting matters and some lack of confidence in their thinking as to the accuracy of the office records. The former setup whereby the plant operations reported to New York further complicated this arrangement. The tendency of each to "build a fence around" its operations was not particularly healthful, and during this period some of the clerical work ordinarily performed in the administrative office was taken over by the manufacturing department, although in our opinion it doesn't really belong there. We have reference to plant payroll, empty package records, and stock counting.

The appointment of an over-all plant manager at London makes a realignment of responsibilities along correct lines workable. This should be the logical time to get the foundation properly laid so that the accounting and clerical work will be under the administration of the office manager, where it can best be administered. Until this is done, we believe that there will be continuing

difficulties.

### General

In prior years it has been mentioned that the manufacturing department personnel at the plant did not have complete confidence in the records maintained in the administrative office. Until such confidence is restored, there will always be some feeling of doubt on the part of the people in the plant and hesitancy on their part to relinquish accounting functions which they now perform. Special stress in this regard should be directed to the office manager in your follow-up so that the office manager can better appreciate his responsibilities in regard to record keeping and the maintenance of adequate internal control and at the same time furnishing the necessary operating data to the manufacturing department people.

From an accounting point of view it appears that the following steps should be given serious consideration in connection with the primary constructive work in improving the condition reported by the audit.

1. Transfer the responsibility for the plant payroll computation from the plant personnel to the administrative office.

2. Assign the stock counting responsibilities in the mill to an administrative

office employee.

3. Clarify between the stock counter and the stock ledger clerk the responsibilities for investigating stock differences.

4. Transfer the responsibility for the maintaining of sack ledgers from the

mill office to the mill administrative office.

The chief executive of the Richland division was disturbed by the unfavorable report. Consequently, he requested all his subordinates who were in any way responsible for the unsatisfactory conditions to provide a written explanation of why such conditions existed. The office manager of the London plant forwarded the following statement:

After considerable discussion it was agreed that the seriousness of the matter requires immediate corrective measures requiring the full cooperation of everyone having any responsibilities for our accounting controls. In connection with payroll errors, it was brought out that the ten minute leeway in punching time cards had caused no little difficulty in reading the punches on the cards as it has increased the number of instances where one time is punched over another. This is particularly true at midnight when the clock jumps from the P.M. to the A.M. markings. Several suggestions were made to help improve this situation but it was decided that this should be held over in order to give further thought to the problem.

The head of the Stratford auditing department, upon review of the files on the audit and follow-up, wrote the following memorandum to the head of the Richland division: "Follow-up does not appear to be complete, but we are closing the files now in view of ... [another] soon-to-be audit." The report on the forthcoming audit to which the auditing department head refers follows. It also deals with the points on which criticism had been directed in the previous audit.

# From the Audit Report of the London, Ontario, Packaging Plant-September 30, 1947:

## Mill Stocks

The mill stocks had been accounted for in a generally satisfactory manner, reflecting a marked improvement over the substandard performance reported during the previous audit. Although the stock adjustments reported in the earlier months of the audit period—in particular, before April, 1947, when the packing of large sizes was discontinued—and the net coffee shortage of 515 pounds, experienced during the fiscal year ended July 31, 1947, appeared somewhat large, a favorable trend of performance in the form of reduced stock adjustments was evident for both coffee and other stocks.

Investigations of the differences disclosed by the auditors' counts (most of these differences were generally reasonable) disclosed a few obvious errors by mill employees in reporting production, fed-ins, and loadings in the less active stock items, suggestions that the larger differences being experienced in the

more active items were being caused by similar inaccuracies.

Most of the procedural weaknesses previously noted had been corrected during the audit period, but violations of certain manual requirements were still evident in the practices of (1) having fed-in reports prepared by shift foremen rather than the men performing that operation, (2) failing to show on packers' tallies bags that had been broken in packing, and (3) hand-tripping registers to record as production the full sacks that were recovered from spillage or from contents of sacks that were broken before the registers had tripped.

# From the Detailed Audit Report:

### Mill Stocks

# Principal Weaknesses or Exceptions

Although the differences disclosed by the auditors' count were generally reasonable, adjustments made to floor counts in certain previous months and the net coffee shortage (515 lbs.) experienced during the fiscal year ended July 31, 1947, appeared somewhat large (Schedule III).

Contrary to the Manual of Stock Control Procedures, packing registers were on occasion hand-tripped to record certain production, and fed-in reports were prepared by shift foremen rather than by the employee performing the feeding-

in operation.

### Remarks

The large adjustments reported during the audit period were noted to have been concentrated in a few scattered months, and it was stated that difficulties occasioned by faulty register operation (February, 1947) and inexperienced stock counters (February and May, 1947) contributed to the differences then experienced.

Of the twelve manufacturing adjustments issued during the eight months ended August 31, 1947, one lacked an adequate explanation, seven had not been properly approved, and one appeared to have been prepared without suf-

ficient proof of error.

# **Plant Payroll**

# Principal Weaknesses or Exceptions

Five errors in applying wage rates (resulting in a net overpayment of \$3.16), were disclosed during the auditors' review of the payroll for August 10, 1947.

Periodic independent distributions of payroll checks by administrative employees had not been made during the nine months from November 14, 1946, to August 18, 1947 (the date of the auditors' arrival).

### Remarks

Miscellaneous exceptions disclosed by the auditors' examination of time cards included two instances in which check-out times were lacking, three cards on which wage rates did not bear the foreman's approval, and three instances of late check-outs.

Except for the exceptions noted, payroll operations seemed generally satisfactory, and represented an improvement over a previously reported unsatisfactory condition.

# Mill Stocks

Considerable improvement over the decidedly unsatisfactory condition in the control over mill stocks reported at the time of the previous audit was disclosed by the auditors' review. In general, most of the previously reported procedural weaknesses had been either satisfactorily corrected or evidenced definite improvement, indicating that, on the whole, follow-up had been satisfactory. Although adjustments made to floor counts in certain previous months and the net cumulative coffee shortage (515 lbs.) experienced during the fiscal year ended July 31, 1947, were larger than could be considered entirely reasonable (indicating that the seemingly adequate stock control program in effect had not functioned in a completely satisfactory manner at all times), the individual and cumulative differences for 1946–47 bettered those for 1945–46, and those for the three months of the current fiscal year bettered those for 1946–47. The improved trend appeared evident for both coffee and other stocks. Differences disclosed by the auditors' count as of September 30, 1947, were generally reasonable.

A factor which undoubtedly contributed to the improved stock performance in the more recent months of the audit period was the discontinuing of large sizes March, 1947. An appreciable portion of the previously reported exceptions concerning deficiencies in reporting production pertained to 1's, 3's, and 5's; although these deficiencies may have been corrected prior to the conversion to restaurant sizes exclusively, that fact could not be definitely ascertained by the auditors. It could not be determined at the time of the audit whether the pack-out of large sizes would be resumed at London, but it is suggested that in the event that this operation is resumed, a generous measure of attention be given it, lest the favorable trend in stock performance be interrupted.

# **Production Reporting**

In general, prescribed procedures (as they applied to restaurant sizes) had been put into effect during the audit period; duplicate registers were used on all packing machines, and a check on the accuracy of the packers' tallies (together with a check of the carrying forward of register readings) was begun in the administrative office. One deficiency still existed, however, in that sacks broken in packing, the contents of which were lost in sweepings or emptied in the packers' weigh boxes, were not shown on the tallies for use in computing net production. Further, in violation of manual procedures, registers were hand-

tripped to record production of full sacks recovered from spillage or from con-

tents of sacks broken before registers had tripped.

It was stated that, in the future, broken sacks lost in sweepings would be indicated on the packers' tallies, and that unregistered production would be separately indicated on the tallies rather than recorded by hand-tripping registers.

What follow-up procedures would you recommend to the heads of the auditing and methods departments?

### EXHIBIT 1

# Stratford Foods, Incorporated

- A. Taken from the Mill and Sales Audit Program and Procedure Questionnaire of the Auditing Department of Stratford Foods, Inc., used by the field auditors in conducting an audit.
  - I. Payroll Audit of a Mill
    - 1. Distribute all checks on first payroll after arrival and obtain signatures of employees for checks issued. Identify employees by comparing signatures with those in personnel department files with those in personnel department files for authenticity.

Period covered by payroll distributed:

a. Compare names secured with those on preceding payroll and account for all additions and deductions.

2. Check payrolls as follows:

a. On last payroll before arrival, check hours, rates, extensions and deductions for the entire payroll (or for about 300 scattered employees at larger plants).

Period covered:

Record from which hours were checked: Record from which rates were checked:

b. Check authorizations of employment and rates for proper approvals and completeness of records.

c. Check parts of additional payrolls if conditions shown by

audit of last payroll were poor.

d. Check totals on three payrolls to vouchers on operating account or to Accrued Payroll Account.

e. Determine that overtime payments are controlled.

f. If week selected does not include payments for suggestion awards, audit a few such payments for another week.

# II. Cash Disbursement Audit

1. Examine vouchers for all details for at least one month and every third voucher for two scattered half months.

Period audited

Voucher reference

Number of vouchers audited

2. Check vouchers for the full month audited to cash disbursements journal.

3. Simultaneously with audit of vouchers for the last month before the audit, watch for omissions of unpaid bills set up at the preceding closing, and also check approximate accuracy of the liability on those bills which were set up. (Discuss in report under heading of unpaid bills.)

# III. Mill and Plant Stocks Audit

- 1. Count all stock in packages, including the ingredients and concentrates on which records are kept in packages. Measure bulk stocks, including coffee (if any) and including all ingredients, if such stocks are considered mill inventory.
- 2. Reconcile count with stock records and trace all unreasonable differences; recount items on which large differences cannot be explained. Reconcile measurements with control records and investigate unreasonable differences.
- Reconcile by commodity classifications, the quantities per the control records as of the date of the auditor's count and/or measurement to ending inventories reported on the most recent operating stock statement.
- 4. Examine individual stock and manufacturing adjustments for the past six months.
  - a. Include in this examination a review of the stock adjustments for all ingredients and a review of fed-in stock.
  - b. Prepare for the work papers a schedule of the net monthly stock variations (per Operating Stock Statements) experienced during the audit period; include data in report if quantities appear unreasonable.
- Check the blending variation report for one month in detail. Review the variations for at least six months and investigate the large ones.
- 6. Review method of taking the reporting bin inventories.
- 7. Check all stock ledger data from original sources (packers' tallies, invoices, etc.) for a period of two or three days immediately prior to count and for two other days prior to the auditor's arrival in the general area.
- 8. Test-check fed-in reports and reconciliations of enrichment concentrates to determine that they are being prepared properly.
- 9. Review office schedule of manufacturing adjustments.
- 10. Examine condition of stock records:
  - a. Are dates, including year, given on all records?
  - b. Is work neat and accurate?
  - c. Are papers filed for ready reference and to prevent loss?
  - d. Are reports signed?
  - e. Are adjustments clearly marked?
- 11. Note physical condition of stock and properties.
  - a. Is piling uniform?
  - b. Are brands and sizes easily distinguished?
  - c. Is quantity of broken and dirty bags and cartons large?
  - d. Are returned stocks segregated and reconditioned promptly to avoid infestation?

e. How often is mill fumigated?

f. Is mill and/or warehouse reasonably clean?

12. Examine latest schedule of old stock prepared by office.

a. Review procedures for reporting old stock.

- b. List stock over sixty days old, based on local reports, in work papers and mention in report if quantity is excessive.
- B. Taken from the Management Guide Book of Personnel Policies and Procedures, Stratford Foods, Inc.

### RECORDING ATTENDANCE

Wage Employees at plants where time clocks are provided—workers register their own time on clock cards as they enter and leave the plant. Employees are not permitted to punch time clock cards more than 10 minutes before their regular starting time, and they must punch out within 10 minutes after their regular quitting time. In case overtime work is authorized, the employee must punch out within 10 minutes after completion of such overtime. This will effect substantial agreement between the time indicated on the clock card and the record of account distribution of time worked, which is approved by the foreman and is used as the basic record for payroll computations.

C. Taken from the Manual of Payroll Procedures of Stratford Foods, Inc.

### WAGE PAYROLL

- e. Distribution to Employees
  - (1) Regular Weekly Distribution

One individual is regularly assigned to distribute pay checks, but an additional person may be designated when it is necessary to accommodate employees at a plant operating more than one shift per day. Pay checks may be distributed by foremen, at the option of the division, but, if avoidable, they are not distributed by payroll department personnel.

(2) Test Distribution

At unannounced intervals as determined by the Division Controller or his representative, responsible administrative employees make periodic test distributions of pay checks averaging four times each year. If practical, the administrative employee should be acquainted with most of the wage employees, as the stock counter is in a food plant, but in no case are the test distributions made by a member of the payroll department. Two of the four distributions each year are formal and two informal.

(a) When an informal test distribution is made, the following

steps are taken:

1. Upon receiving the checks, the employee who makes the distribution adds the amounts of the checks, and compares the total to the Pay Check Register.

2. Each check is presented to the proper employee, and each employee is identified insofar as possible.

3. Every check is distributed directly to the employee.

- (b) When a *formal* test distribution is made, the following steps are taken *in addition* to those listed under an informal distribution.
  - As each employee is given his check, his signature is obtained on a worksheet, or on a copy of the Pay Check Register.
  - The signatures secured are compared to the signatures appearing in the plant personnel files or to a file of W-4 forms.
- D. Taken from the Manual of Cash Procedure of Stratford Foods, Inc.

### CASH DISBURSEMENTS

### I. General and Internal Control

Accounting for cash disbursements involves certain fundamentals of internal check which cannot be ignored. The use of internal checks, whereby one individual verifies the work of another either directly or incidentally, is one of the best safeguards that can be established in expending cash with proper authority and for value received. In the Stratford organization, money is spent from the authorized funds through the general office, divisional offices, grain departments, branch selling offices, branch mills, and stores. The fundamental principles to be followed in safeguarding outgoing cash may be applied to each of the foregoing disbursing agents, although the routine of establishing internal check varies at several points in proportion to the size and type of the organization.

### 1. Authorization to Disburse

a. Whenever practical, the work of checking vendors' invoices and making applications to purchase orders should be assigned to an accounting employee who has no responsibility for

purchasing.

- b. Before issuing a check, the disbursing cashier or clerk is required to obtain adequate supporting papers properly checked by authorized employees, who initial the supporting papers, ordinarily for each specific factor, and usually approved for payment by the proper executive, manager, or department head. Approvals, either on supporting papers or in auditing and approving the voucher, may be indicated by signed initials or a distinctive initial, but in *no* case shall approvals or evidences of check be indicated by a rubber stamp or a typewritten signature or initials.
- c. The person approving the invoice for payment should never be the disbursing cashier or clerk.
- II. Checking incoming merchandise before making payment Original copies of Material Received Reports and other evidences

of receipt are routed directly to the accounting employee (without first going to the buyer). When the evidence of receipt has been carefully checked to the vendor's invoice as well as the Purchase Order and found in agreement, the accounting clerk indicates his initials in the space for Quantity. (If the original Material Received Report becomes lost, one of the duplicate copies of the original preparation should be used. A notation is made on the substituted copy indicating that the original copy was lost. The file from which the duplicate copy is obtained should have a sheet inserted indicating the number, the vendor from whom received, the item received, a notation that the MRR copy is being used as a substitute for an original which was lost, and preferably a cross reference to the number of the voucher which it supports.)

# E. Taken from the Manual of Stock Control Procedures for Finished Products, of Stratford Foods, Inc.

### I. Production

# 1. Registers for counting production

Packing machines are generally equipped with double registers. One of the registers is set back to zero at the end of each order; it should be manipulated only to turn it back to zero. The manipulation of registers during packing operations to prevent them from tripping is not permitted. The second register is a cumulative one which is permitted to run without being set back. If practicable to do so, this register should be locked.

Single registers may be used provided the stock control with only one register is satisfactory. The single register is to run cumulatively as described above for a second register.

On the pony or pneumatic machines, packages which are *cased*, there should be a case register in addition to the single or double registers for sacks. The case register readings are used to govern the report of production, with the sack register reading being used as a check. The case register runs cumulatively as described above in the first paragraph. Differences based on readings of the two registers are investigated to determine whether sacks broken in packing represent the variation between the two registers.

# 2. Tally forms for recording production

A Packer's Tally, or Packing Order and Tally, is used to record quantities on products packed. If the first form is used, one is usually prepared for each packing machine operated for each shift and each packer.

The Packing Order and Tally performs with one form the functions of the packing order and the packing tally; a complete tie-in of the two forms is thus provided. The planning department prepares the first five columns of the form avoiding the necessity of most of this information being copied on the packing tally in the mill. Provision is also made for recording the pro-

duction of three shifts on the same form. There is, in addition, a column for recording hours expended, making it possible to compare man-hours to pack-out on a daily basis by packers or packing crews. It is designed to be used at one machine during the shift.

3. Recording pack-out of packing machines

On the basis of the Packing Orders, or the Packing Order and Tally, prepared by the Planning Department, the packing foreman instructs the various packers as to the products each is to pack.

If the Packing Order is used, the packer enters the following

information on the Packer's Tally:

1. Shipping order number (optional)

2. Brand (If the brands to be packed are phosphated or self-raising products, they should be so identified.)

3. Grade

4. Size of package5. Kind of package

6. Opening register reading (for the first order)

When a package is broken in packing and set aside to be repaired, re-sacked, or fed-in, it is reported on the register as a package packed. On the other hand, if the package is so badly damaged that the contents are emptied into the packer's weight box or lost as sweepings, the packer records this package as a torn package in the "Number of Torn Packages" column on the tally. In each of these instances it is assumed that the register has been tripped by the weight of the contents in the package which has been broken in packing.

When the order is completed (or part order if split between packers), the packer records the number of packages packed per the register, less the number of torn packages, on the Packer's Tally in the "Number of Packages Packed" column. The register is then set back to zero if there is a second, cumulative register on the machine.

The cumulative reading of this second register is noted also when the order is completed and entered in the "End" space of the "Register Reading" column. The reading in the "Start" space is subtracted from it to secure the quantity packed per the cumulative register. This amount, which is entered in the "Difference" space of the "Register Reading" column, must agree with the sum of the entries in the "Number of Packages Packed" (in good order) column and the "Number of Torn Packages" column. This check should be made after each order is completed. The closing register reading is then brought down on the next order line as the opening register reading of the next order. If there is only one register on the packing machine, this single register runs cumulatively, and the packer, at the beginning and end of each order or part order, records the opening and closing

register readings on the tally. The difference between the two register readings is the number of packages packed per the packing machine register, and is entered in the "Difference" space in the "Register Reading" column. This difference, less the number of torn packages, should then equal the number of packages in good order packed out, and this number is entered by the packer in the "Number of Packages Packed" column. The closing register reading is brought down on the next order line as the opening register reading of the next order. Whenever practicable, the loading or warehouse crew should check the quantities packed, with the packing crew at the completion of each item. If an unreconcilable difference develops between the number of packages packed according to the registers and the quantity received by the loaders, the packer should immediately notify the packing foreman concerning the discrepancy.

The cumulative register is the official authority for the count of packages packed. In case further investigation of a difference shows, however, beyond reasonable doubt that the production reported according to the register is incorrect, the production figure may be corrected.

### II. Fed-Ins

The accumulation of broken packages should be avoided by feeding in the contents as soon as possible. All broken packages are considered as floor stock and hence carried on the stock ledger until actually fed-in. Particularly on the small sizes, it is desirable to provide receptacles about the mill into which the broken packages, subject to repair or repackaging are placed. Each day an employee should take the contents of each receptacle to the fed-in hopper for feeding in.

# III. Counting the Stock

# 1. Frequency of counts

To make the stock control system most effective in disclosing errors and irregularities, it is necessary to count frequently the stocks actually on the floor, compare the counts with the stock ledger balances, and investigate the differences so that the causes thereof may be located and eliminated.

When differences between the counts and book balances are numerous and large, the stocks are counted daily, and differences checked promptly and thoroughly. The causes of differences should be eliminated as quickly as possible by proper action of the department or departments responsible for the weakness.

When the system is functioning properly, however, the stocks are counted only once a week, with an additional count at the end of the month. The weekly counts are made at the end of the week or when operating schedules give opportunity for counting while no production or loading is going on. Reconciliations of counts with stock ledgers should be made promptly.

### 2. Stock counters

Accurate counting of stocks is essential to effective and economical operation of the control. The stock counter should, therefore, be alert, observing, and accurate in mathematical computations and recording information.

Because familiarity with the plant and the stock aids materially in counting correctly, it is advisable that the same man count the stocks every time. Occasionally, at the end of the month, it is helpful to have an extra man work with the regular counter to check his count, calculations, and the recording by keeping a separate record of the count and comparing it with the counter's record.

In making the counts, there is need for close cooperation with the Manufacturing Department in order that the stocks may be counted more readily. The stock counter can perform his function better if stocks are piled in an orderly fashion, and he is dependent on the Manufacturing Department for this aid.

Since the stock counter performs a function of accounting control, he should be responsible to the office manager, and not in any way responsible to the plant superintendent or the packing and loading foremen. The stock counter and the operating personnel should be mutually helpful, but the counter should be free of any control by the operating personnel. In accordance with this principle, the counter is not assigned to work in an operating department. If at all possible, the stock ledger clerk does no stock counting.

# 3. Comparisons with books

The stock books should be posted and balanced as soon as possible after the cut-off, so that the count can be compared with the books. When the stock counter has completed and totaled this count and the stock ledger clerk has computed his balances, the count should be checked against the stock ledger. The development of the memo stock records by the counter for comparison with his stock count prior to checking with the stock ledger is not permitted.

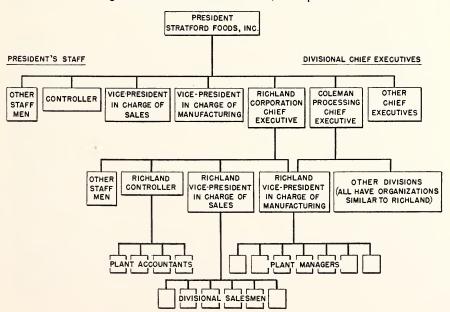
The stock clerk may alone compare the count with the stock ledger, or the *stock counter* may call the count *to* the stock clerk. If there is a difference between the count and the book balance, the amount of the difference not accounted for is written in the "Variations" column of the stock ledger, opposite the balance, and also written in the "Over or Under Book" column of the Mill Stock Count. When the count and book balance agree, a check mark or dash is placed opposite the balance on the ledger to show that the count agrees.

Under the procedure by which "date order" and "track" cars set on the hold tracks remain in the mill stock ledger until switched from the company's yards, there is a difference between the *actual* floor count and the stock ledger to the extent of those cars. The stock in "date order" and "track" cars is either coded as such in

the "Floor Count" column of the Mill Stock Count Sheet or is listed on special inventory sheets. This avoids the possibility of confusing stock available for filling orders and that which is in the process of being shipped from the mill.

The form, Hold Track Cars Still in Stock, may be used for making this special inventory listing, if desired. (At the end of the month, this form is prepared in duplicate.) This form is prepared by the Loading Department each time a floor count is taken, and is prepared from the loading records being held until the cars are switched from the hold tracks. The individual items on the loading record copies are entered on the Hold Track Cars Still in Stock form by shipping order number, brand, size, and number of packages. Similar brands and sizes on different shipping orders are entered in the same column. The columns are then totaled and the form sent to the stock ledger clerk, who uses it to explain stock differences due to cars on the hold tracks. The difference between the stock ledger and floor count shown in the "Variation" column of the ledger and the "Over or Under Book" column of the count sheets should be the net difference after considering the assortment on the Hold Track Cars Still in Stock. The totals of this latter form are not indicated on the Mill Stock Count Sheets. At the end of the month, a carbon copy of Hold Track Cars Still in Stock accompanies the floor count sheets sent to the individual in the mill administrative office checking the accuracy of the inventory.

**EXHIBIT 2**Organization of Stratford Foods, Incorporated



# case 13

# NORTHERN ALLIANCE COMPANY

# Internal Audit Report

In this case the problem of how to present findings of an internal audit report is raised. The student is asked to relate the significance of findings to the need and objectives of the reporting procedure.

The Northern Alliance Company was a subsidiary of Stratford Foods, Incorporated, one of the largest producers and distributors of food items in the United States with sales offices throughout the world. Northern Alliance, as did most of the Stratford subsidiaries, sold primarily to retail food outlets, both grocers and restaurants. The subsidiary serviced the North Central area of the United States. Its operations consisted of buying raw produce—and some canned goods as well—and processing and packaging the raw food items into the form commonly seen on grocers' shelves; storage and distribution were also a vital part of the firm's activities.

On April 1, 1948, Northern Alliance opened a new plant and office in Toledo, Ohio. The management of Stratford Foods, Inc., in order to form some appraisal of the progress being made by the Toledo plant, requested the Internal Auditing Department to perform an audit after the first four months of the plant's operations. As can be seen in the audit report which is reproduced below, the plant had experienced some difficulty in getting production under way. Personnel were new to their jobs and several mechanical problems were encountered in the production facilities. In addition, a shortage of trained clerical personnel hampered the establishment of an adequate office staff.

Exhibit 1 of the Richland Corporation case presents excerpts from the Stratford Foods manuals on internal auditing which pertain to the accounts mentioned in the "Tentative Audit Report" reproduced below.

# Tentative Audit Report of Northern Alliance Company Toledo, Ohio, Mill and Office, October 31, 1948

#### General Condition of Office

Although most phases of the accounting were appraised as having been performed in a generally satisfactory manner and the clerical work was notably free of exceptions, unfavorable results reflected by the accounting controls for the major operating functions (which involved a large percentage of the total accounting effort) and numerous, although generally not overly significant, weaknesses in accounting procedures and internal controls were noted.

The deficiencies noted in the review of this initial period of operation were somewhat extensive and detracted significantly from the otherwise generally favorable performance noted. However, these weaknesses were ones of which management was well aware and toward which a continuing program of corrective action had been and was currently being directed.

Except for the fact that the relative scarcity of accounting personnel at Toledo complicated the achieving of adequate internal controls in some instances, it appeared that the needed refinements in accounting procedure could be effected without particular difficulty.

#### 1. Plant Stocks

a. Finished Products—Fair. Net cumulative unexplained stock adjustments were somewhat large, totaling an overage of 2,583 cases during the eight months ended November 30, 1948. Individual adjustments were also large, overages and shortages totaling 9,100 cases during this period, precluding a satisfactory and current control over the stocks.

Deficiencies in production reporting procedures and in loading operations appeared primarily responsible for the performance noted. Official production data reported by the assistant packing superintendent represented the employees' best judgment after comparing the total production indicated by registers in case sealers with the production by brands and sizes indicated by tow-motor operators' reports. The differences between these two sources of data were numerous, and belt registers were to be installed to obtain

a more reliable breakdown of production by brands and sizes. A weakness in internal control appeared to stem from the practice of notifying the assistant packing superintendent of daily stock differences and from failing to require for the office files any original source date to support the daily reports of production received from him.

Approximately one-third of the total stock adjustments had resulted from loading errors made in one month and corrected in another. Although only about twenty-five per cent of the mill shipments were made in pool cars, more than fifty per cent of the misloadings involved pool car orders. Seventy per cent of the reported loading errors and of the stock quantities involved therein represented shortage claims, and it appeared not unlikely that many overloadings had not been reported and that the shortage adjustments attending these overloads were being more than offset by overages resulting from unrecorded production—a net cumulative overage of about 2,600 cases having been reported during the eight months ended November 30, 1948.

# **Production Reporting**

Package food production was recorded by (a) case sealer registers and (b) records of cases warehoused as determined from tow-motor operators' reports of product transferred to the storage area. These two sources of production data were compared by the assistant packing superintendent, and a third report-called a daily packing report—was prepared by him, representing his best judgment (after the aforementioned comparison) as to the quantity of finished products produced. The quantities he reported were recorded in the official stock ledgers. The two original recordings of production were retained for approximately one week by the assistant packing foreman before being destroyed, and were not made available to the stock ledger clerk to support the daily packing report. A significant weakness in the control over reported production existed in that the stock ledger clerk communicated daily stock differences to the assistant packing superintendent. Possibly, this impaired the superintendent's judgment in appraising the accuracy of sealer register readings and tow-motor operators' reports, and prevented the disclosure of legitimate stock differences.

Inasmuch as two of the three sealing machines in operation serv-

iced more than one size and brand of product, these case sealers necessarily recorded total production only (except for three registers that were so placed on one sealer as to record the larger cases). The detail of pack-out by brand and size was therefore determined from quantities accounted for by the tow-motor operators' pallet tickets. The reconciliation of pallet tickets with register readings taken by the auditors for a two-day period disclosed several rather large differences between these two records of production, as well as differences in readings of registers on the same sealing machines. (Three registers were attached on each of two sealers, and five registers on the third sealer.) A summary of these differences is presented in the following table.

	Dece	mber 8 Pro	duction	Decer	nber 9 Pro	duction
	Per Pallet Tickets	Per Register Readings	Per Daily Packing Report	Per Pallet Tickets	Per Register Readings	Per Daily Packing Report
Sealer #1 (Assorted Sugars)	470	463 467 467	467	452	501 501 501	500
Sealer #2 (Salt)	4,796	4,174 4,177 4,942	4,796	3,461	3,523 3,524 3,528	3,521
Sealer #3 (Coffeepak)	1,719	1,777 1,778 1,779	1,777	1,664	1,682 1,683 1,683	1,682
Total	3,221	3,282 3,283	3,279	3,633	3,646 3,647	3,636

In order to provide a more detailed record of production by individual sizes and brands—on the basis of automatic registers—it was stated that belt registers were to be installed on the packing lines. One such register was currently in operation.

# Loading Operations

Approximately 35% of all stock adjustments (9,100 cases) of package foods occurring during the eight months ended November 30, 1948, resulted from car loading errors made in one month and

for which billings were adjusted in another. Although pool car shipments accounted for approximately 25% of total shipments from the Toledo plant, more than 50% of the reported car loading errors —171 during the eight months period—were claims involving pool car loadings. (Certain of these claims, however, undoubtedly were attributable to inaccuracies in unloading rather than in loading cars.) Ten per cent of the total errors reported involved "balance items"—items on which loaders determined the quantities to be shipped on the basis of cases required to complete a car to physical capacity.

Approximately 70% of both the number of reported car loading errors and the quantities misloaded involved shortage claims, and it appeared not unlikely that all overshipments were not being reported and that stock shortages resulting therefrom were being offset by overage adjustments developing from production reporting deficiencies.

An average of 140 cars were loaded monthly at the Toledo plant. Except for minor quantities of by-products, no shipments were made by truck.

SCHEDULE 1

Summary of Stock Adjustments and Production

Package Foods—For the Eight Months Ended November 30, 1948\*

	Stock Ac	ljustment	
_	Net	Total	Production
Total 8 Months Ended Nov. 30, 1948	2,583	9,100	1,369,776
November, 1948	614	1,134	175,236
October	-207	683	186,895
September	-168	768	201,389
August	33	711	239,663
July	551	2,071	253,152
June	1,358	3,031	196,946
May	421	675	90,627
April	-19	27	25,868

<sup>\*</sup> Figures in equivalent cases.

# 2. Control over Coupons—Fair

Large overages, rather than normally expected shortages, of those coupons used with mechanical coupon droppers (all but Coffeepak

coupons) had been experienced during the audit period, amounting to 484,700 sugar coupons (5.4% of usage) and 111,500 salt coupons (3.1% of usage) for the five months ended November 30, 1948. The reported overages appeared principally attributable to the failure of automatic droppers, because of mechanical difficulties, to insert coupons in numerous packages. The auditors' tests of automatic coupon dropper insertions during a three-day period is summarized in the following tabulation:

Item	Consecutive Packages Counted	Packages Coupons Not Inserted
Salt	100 200 100	2 60 1
Oatmeal Cookies	543 300	238 32
Kiddy Kookies	350 200 200	69 55 30
Sugar	300 200 250	94 4 4

Coupons were inadvertently not being inserted in oatmeal-cookie packages during one of the auditors' test counts. This situation had apparently developed from the failure to watch closely, and replenish when exhausted, the small supply of coupons held by the dropper. (Insert-type coupons have been discontinued in favor of label-imprinted coupons, subsequent to the auditors' observations.) Instances were also noted in which more than one coupon was inserted in packages, the printing ink apparently causing coupons frequently to adhere to each other.

Contrary to the large overages of mechanically inserted coupons, consistent large shortages of manually inserted coupons (Coffeepak only) were noted, totaling 51,400 coupons, or about 4.3% of usage, during the five months ended November 30, 1948.

The physical control over coupons appeared adequate. Locked

storage space was provided for all coupons except those which were

part of the package printing.

Although several minor procedural deficiencies were noted in the accounting for coupons, this phase of the work appeared to have been generally performed satisfactorily.

Manual instructions relating to coupon control as recently issued by the methods department were not on file in the Toledo office.

**Remarks.** Although involving generally minor quantities, coupons released from fed-in operations were not accounted for on the reconciliation record.

Manual instructions relating to coupon control were not on file in the Toledo office.

Ledger accounts were maintained and posted daily for each cou-

pon series to provide operating data.

The physical control over coupons appeared generally adequate. Locked storage space was provided for all coupons except for those imprinted on labels.

Spoiled coupons and labels with coupon imprints were burned daily.

A summary of reported coupon differences is presented in Schedule 2.

# 3. Mill Payroll—Good

**Principal Weaknesses or Exceptions.** Numerous instances in which employees were punching in more than ten minutes before starting times were noted during the auditors' reviews of one week's payroll. (A notice prohibiting this practice was posted during the audit.)

Contrary to manual provisions no test distribution of pay checks had been made during the first eight months of operations, and one unclaimed wage payroll check (130 days old when noted by the auditors) had not been cancelled after sixty days had elapsed. (Payrolls were regularly distributed by foremen.)

**Remarks.** Although approvals on time cards appeared generally satisfactory, it was noted during a review of the time cards for three payroll periods that foremen's approvals were lacking in eight instances for daily hours worked, and an omitted punch-out time had not been noted by the foreman.

The Manual of Payroll Procedure had not been made available to the Tolcdo plant.

SCHEDULE 2

Summary of Coupon Adjustments

For the Five Months Ended November 30, 1948

Five Mos. Ended November Nov. 30, 1948	9,100,000 484,700 5.4% 1,000,000 74,000	3,600,000 111,500 3.1% 600,000 9.5%	1,200,000 200,000 -51,400 -4,600 -4.3% -2.3%
October	2,000,000 -32,000 -1.6%	700,000 56,000 8.0%	100,000 -3,300 -3.3%
September	2,500,000 207,500 8.3%	$\begin{array}{c} 500,000 \\136,500 \\ 27.3\% \end{array}$	300,000 —3,900 —1.3%
August	3,000,000 162,000 5.4%	1,000,000 9,000 0.9%	$\begin{array}{c} 200,000 \\ -25,400 \\ -12.7\% \end{array}$
July	600,000 73,200 12.2%	800,000 240,000 30.0%	400,000 —14,200 —3.8%

Coupon usage is the number packed based on production. Sugar and Salt coupons are inserted by automatic droppers. Coffeepak coupons are inserted manually.

### 4. Miscellaneous Accounts Receivable—Good

Principal Weaknesses or Exceptions. The internal control over miscellaneous accounts receivable was weakened through concentrating in a single employee the responsibilities for (1) maintaining these receivable records, (2) invoicing the purchasers for the materials sold, (3) making and approving sundry journal entries affecting these accounts, and (4) receiving mail remittances from purchasers without a prior recording of such remittances being prepared.

Remarks. The small number of office personnel explained, in part, the concentration of duties that existed.

The balance in Miscellaneous Accounts Receivable as of October 31, 1948, totaled \$488.70, of which \$330.00 represented a charge for equipment returned to a vendor for credit, \$46.00 represented deposits on containers, and \$112.70 represented the amounts accruing from the sale of scrap containers during the month of October.

Assume that all accounts not mentioned in the report are satisfactory. Prepare a summary of the audit report you would send to the Northern Alliance chief executive and to the Stratford Foods Management.

# case 14

# THE DOLPHIN MANUFACTURING COMPANY

The Internal Audit Follow-up

This case considers the effectiveness and suitability of the use of an internal department as the "eyes and ears" of management in planning for control in a decentralization operation.

From the date of its founding in the early 1900's, The Dolphin Manufacturing Company had proved unusually successful. Largely family owned, the company grew and prospered until, with its diversified line ranging from farm machinery to earth-moving equipment, it had become one of the leading industrial equipment manufacturers in the country. In the middle 1940's, however, the time seemed ripe for a substantial change in management and such a change was consequently engineered under the leadership of Robert Wyman, who at that time had taken over the presidency of the company. This new management inaugurated a plan of managerial and financial controls such as the company had not previously known.

Prior to 1946 there were few formal control devices, since for many years the management of the company had been dominated by the strong personality of the founder. Consequently, managerial and financial responsibilities were highly centralized in the company's home offices in Chicago. The company possessed in this older era only one set of books, maintained in the Chicago offices, and had never been concerned with such formal control devices as organization charts or accounting manuals. The changes beginning in 1946, leading to a decentralization program somewhat along the organizational lines of General Electric or General Motors, were, therefore, of far-reaching consequences to the entire company.

In keeping with this movement towards decentralization, the company's operations were divided into divisions, these divisions having under their jurisdiction various manufacturing plants, assembly plants, and parts depots. The divisions and plants were established as profit centers with responsibility delegated to local

management to earn a suitable return upon the company's investments in the assets charged to these various divisions and plants.

The accounting organizations within these divisions and within the plants became autonomous units. It was the responsibility of these accounting organizations to perform all the accounting functions pertaining to the activities of these autonomous units, except for such activities as the preparation of tax returns which was handled on a company-wide basis. Nearly 100 different accounting locations were established, and the accounting procedures at these locations were performed in accordance with instructions prescribed by the home office in the *Controller's Manual*. However, where necessary or appropriate, the various divisions were expected to write supplementary accounting procedures governing their distinctive needs. Monthly financial and operating statements were submitted from each of these nearly 100 accounting units.

In addition to the inevitable accounting problems contingent upon the company's adopting decentralized management direction of operations, Mr. Wyman faced the further problem of establishing effective company-wide respect for and cooperation with the activities of the accounting and financial departments. In past years these groups had been relegated to a very subordinate position in the company's organizational scheme of operations. The details and technicalities involved in the renegotiation and settlement of the company's war contracts provided Mr. Wyman with an excellent excuse for commissioning a nationally-known firm of public accountants to make an audit of all company assets and liabilities; an audit by public accountants had never been previously made.

In order to capitalize upon the activities of the public accountants, as well as to make future provision for a continuous review and appraisal of the company's revitalized accounting operations, an internal audit department was established. Previously there had been a small internal audit department but its activities were limited due to inadequate personnel and lack of management acceptance.

The objectives of the reorganized internal auditing department were set forth in the company's *Organization Manual* as follows:

1. Develop and conduct an internal auditing program, comprising the systematic examination of accounting methods and related procedures and the verification of records and financial statements on a company-

wide basis, to assure that the financial condition and operations of the company are accurately and uniformly reported.

2. Determine whether established financial and accounting policies and procedures are being observed, and if adequate controls and reports are

maintained on all company assets and operations.

3. Recommend revisions in accounting policies, procedures, controls and related matters, where such revisions will improve the accuracy or value of records and reports required in measuring the company's financial status and operating results.

4. Prepare and submit reports of audits conducted under the company-wide internal auditing program, and review reports of remedial action taken

thereon.

5. Functionally supervise the internal auditing activities of the divisions, including the scheduling and scope of divisional audits in order to assure maximum effectiveness in audit coverage.

6. Coordinate internal auditing activities with outside auditors engaged by

the company.

The senior public accountant, Mr. Paul Robey, who had been in charge of the 1946 audit of The Dolphin Manufacturing Company by the public accountants, had so impressed the company's management by his tact and competence that he was asked to head the internal audit department. As general auditor, Mr. Robey was one of three persons who reported directly to Mr. Averett, the vice-president of finance—the other two were the treasurer, Mr. Jones, and the controller, Mr. Roberts.

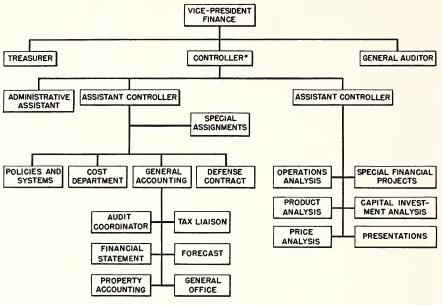
The treasurer's duties were primarily those of cash management. These duties included banking arrangements and relationships, credit and collection policies, and the employment of surplus funds through the purchase, custody, and sale of securities.

The controller was responsible for all accounting activities. The controller's office, through the medium of the *Controller's Manual*, issued instructions governing both accounting procedures as well as the maintenance of the company's system of internal control. Final consolidated financial statements and company-wide financial and operating analyses were prepared under the direction of the central controller's office.

The general auditor, on the other hand, had no direct responsibility for or direct authority over the accounting operations, since his position was regarded solely as one of review, criticism, and suggestion. However, the general auditor was free to conduct his audits in any area of the company's activities at any time. Between the treasurer, the controller, and the general auditor, close liaison was maintained

at all times. (For a more complete description of the organizational responsibilities of the controller's department, see Exhibit 1. Note the office of Audit Coordinator under General Accounting.)

**EXHIBIT 1**Organization Chart—Finance Department



<sup>\*</sup> Dotted line relationship with controllers in decentralized operating units.

The general auditor's office comprises the general auditor, an assistant general auditor, one staff assistant, three section supervisors, thirty field auditors, and the necessary secretarial and typing personnel. Internal audit personnel have thus far been obtained primarily from the field of public auditing, although two of the present staff have been temporarily transferred from the controller's department for the "broadening" experience inherent in the internal audit activities. Also within the last two years better than fourteen of the audit group have been transferred from the internal audit staff to positions of equal or greater responsibility in the controller's organization, either at the home office or at the divisional or plant level. The general auditor has welcomed this use of the audit program for training purposes.

At present Mr. Robey uses mostly seniors and semi-seniors in his field audits on the theory that too many untrained juniors put too much strain upon the senior staff. The field auditors travel in two- or three-man teams and are frequently away from the home office for as much as a year at a time. An annual get-together has recently been instituted, therefore, in order to bring the men back to headquarters for a week of both social activities and of round-table talks, the latter being aimed at a constructive analysis of the internal audit program by varying company officials representing a diversity of viewpoints. An audit manual, including basic audit programs, is in use to provide thorough and consistent coverage, although considerable latitude in making an investigation is still left to the individual auditor. Careful attention is also paid to appraising the effectiveness of the system of internal control developed at each of the audit points.

Mr. Robey has instructed the auditors to discuss their findings with management at the plant levels in the course of the examination both to insure factual accuracy and to keep plant personnel abreast of audit developments. The internal audit team also attends the post-audit management meetings at which the auditors' findings are discussed preparatory to the drafting of the formal audit report addressed to Mr. Averett, the vice-president of finance.

Mr. Robey has described his internal audit procedures in the following fashion:

For the most part, our audits of operating locations are over-all audits covering every phase of the accounting activity within the operation. On occasion, reviews are made covering only certain specific phases of an activity. Such reviews are referred to as feature audits.

We use an audit manual as an aid in performing our audit function. This manual describes the general objectives and the plan of operation of the auditing department. In addition, it includes three standard audit programs—one pertaining to our manufacturing operation, one pertaining to our assembly operations, and another to our parts depot activities. As these major activities vary widely in character, we believe that greater efficiencies are realized through directing our programs toward each type of activity. These programs are modified, as necessary, to meet specific circumstances. We try to avoid auditing in detail unless circumstances require that it be done. We believe that much of the detailed checking which might be done as part of an audit should be done as a part of the regular accounting routine. During our audits, we determine that the necessary account analysis and detailed verification steps are performed as a part of the accounting function.

We continuously stress the fact that our audit programs are to be used for

guidance, that completion of the work called for by the program does not necessarily mean satisfactory completion of the audit, and, conversely, satisfactory completion of certain audits does not necessarily require full compliance with all steps set forth in the program. Our supervisors review, with the auditor in charge, any steps omitted in the course of the audit and any additional steps considered necessary. Because of the newness of our accounting system and the steady flow of accounting instructions and procedures further refining this system, it is necessary that our audit programs be consistently

reviewed in order that they may be maintained on a current basis.

A formal audit report is issued covering each audit assignment. Our reports are narrative in form and rarely include any financial statements or schedules. The typical audit report covering an accounting location includes a brief introduction; a description of the scope of the audit, citing the principal areas covered and any areas which might have been omitted for one reason or another; and our comments pertaining to the audit findings. We do not report minor errors and clerical mistakes unless their frequency indicates definite weaknesses in organization, procedures, or internal control. Each audit finding is discussed separately, stating the conditions noted, any circumstances which might contribute to the condition, and the accounting instruction or procedure which may have been violated. If corrective action in whole, or in part, is taken by the location during the course of the audit, a statement to this effect is made in the report. Each audit finding is followed by our recommendation as to the corrective action which should be taken. Our reports contain comments pertaining only to those items which are in need of corrective action. In other words, we always report on the deficiencies and rarely, if ever, give praise.

We devote a great amount of time to the preparation of audit reports. Various sections of the report are prepared in the field by the man doing the work. The report is reviewed by the section supervisor. It is again reviewed and edited by myself, or the assistant general auditor. Great care is taken to avoid personal criticism, and every precaution is taken to assure that all statements

are based on facts—not suppositions.

During the course of the audit, all findings are discussed with the local controller or his representatives. At the conclusion of the field work, we hold what we refer to as an "Audit Conference." This conference consists of a meeting attended by the senior auditor who conducted the audit, the section supervisor, and, if possible, myself or my assistant, together with the plant manager, plant controller, and such other individuals as they may wish to have attend. At this meeting, the draft of the report to be issued is read, and whatever discussion is necessary takes place in order to establish as facts the findings enumerated in the report, and to obtain agreement by the location being audited that conditions are as reported. Our plant managers take a keen interest in these audit conferences.

Our reports are addressed to the vice-president in charge of finance, who receives one copy. Copies of the report also go to our public accountants and to the manager of the division in which the particular operation is located. A number of copies, depending upon the needs of the particular division, are submitted to the central controller's office. The central controller's office distributes these reports to the division which, in turn, furnishes the plant with the necessary copies.

The following is a recent audit report taken from the files of the internal audit department of The Dolphin Manufacturing Company:

Distr: 1 Averett

13 Controller
1 Public Acc'ts

1 Division Mgr.

## BALTIMORE MANUFACTURING PLANT

## Atlantic Division

As of January 31, 1951

April 25, 1951

Mr. R. G. Averett Vice-President—Finance

Dear Sir:

An audit has been made of the Baltimore Manufacturing Plant, Atlantic Division, as of January 31, 1951. The field work was performed by Mr. C. W. Smathers and one assistant during the period from February 12, 1951, to April 25, 1951. The accounting work at this location is under the direction of Mr. E. A. Hugh, Plant Controller.

# Scope

The examination covered the period from March 31, 1950, the date of the last audit, to January 31, 1951, with attention directed, for the most part, to procedures followed and transactions recorded in the latter part of the period. In some instances, transactions occurring in February and March, 1951, were also examined. Confirmations of working fund and payroll bank account balances were obtained independently from the depositary as of January 31, 1951, and reconciliations prepared by local personnel as of that date were reviewed and tested. Intra-company accounts receivable were traced to settlement certificates. Outside accounts receivable were confirmed by direct correspondence with customers.

Inventory accounts were reviewed and test-checks made of recorded transactions. Productive material cost records were tested, and procedures followed in compiling costs of assemblies and individual parts were reviewed. Quantities of selected items of steel wire stock on hand were counted and

compared with quantity balances reflected on inventory records.

In regard to our examination of fixed assets, tests were made of additions, retirements, and depreciation provisions, and routines were reviewed for conformance with established project procedures. Comments regarding this phase of the examination are included under Paragraphs I-A and I-B of this report.

The propriety of payments to vendors and the related accounting distribution was tested against supporting documents. Computations of accrued payrolls, taxes, and other liabilities were also tested. Sales and cost of sales were

reviewed and representative tests made of underlying records.

Throughout the examination, special emphasis was directed toward determining the degree of internal control existing in procedures currently being followed. Also, the charts prepared by this location, in accordance with the Company's internal control review program, were tested to procedures in effect. Exceptions noted are commented on in Paragraph IV of this report.

Where necessary, reference is made in this report to Accounting Manual procedures as we have been informed that such procedures are to remain in effect pending the development and issuance of accounting and operating instructions by the Atlantic Division.

#### Results of Examination

The matters which are believed to be of special interest are outlined, as follows, with the supporting explanatory paragraphs indicated.

Recommendations	Paragraph
Construction in Progress Account Not Cleared Promptly Delays in Recording Retirement Transactions Badge and Tool Clearance Procedure Not	
Properly Followed	II
Sales Taxes Incorrectly Accrued  Need for Strengthening Internal Control	III IV

#### DETAILED COMMENTS

#### I. Fixed Assets

# A. Construction in Progress Account Not Cleared Promptly—Findings

As of January 31, 1951, there were approximately 100 projects, completed from three to twelve months previously, for which accumulated costs had not been cleared from the construction in progress account (1A 74-1A). Although these projects involved expenditures of less than \$1,000 in each case, it is important that all acquisition costs be transferred promptly to ultimate fixed asset accounts so that depreciation may be properly computed and accurate property records provided.

#### Recommendations

It is recommended that the costs of all completed projects be cleared from construction in progress to ultimate fixed asset accounts as soon as possible. In the future, acquisition costs should be transferred to ultimate fixed asset accounts promptly after projects are completed.

# B. Delays in Recording Retirement Transactions—Findings

The examination of machinery and equipment retirements disclosed excessive delays in recording transactions in the retirement clearing account. For example, in the case of three disposal authorities covering property costs approximating \$216,000, transfers from the fixed asset account to the retirement clearing account had not been effected as late as February 28, 1951, although work

order charges indicated that dismantlement had been commenced as far back as April and October, 1950. In another case, proceeds from the sale of equipment were recorded in September, 1950, but the asset costs had not been transferred as of February 28, 1951.

In several instances, no entries were recorded to credit the retirement clearing account and charge scrap income for the estimated salvage values shown on disposal authorities. In other cases no dismantlement costs were recorded, although the disposal authorities indicated that such costs were anticipated in connection with the retirements. There were also inconsistencies in the handling of transfers from the retirement clearing account to the depreciation reserve account. In this connection, certain balances representing dismantlement charges and salvage credits were being carried in the retirement clearing account at January 31, 1951, although the costs of the related assets retired had been transferred to the reserve account several months earlier.

#### Recommendations

It is recommended that the retirement clearing account be analyzed, and necessary entries recorded to effect transfers of property costs from the fixed asset accounts. In the case of retirements which have been completed, all costs and salvage credits should be cleared to the applicable depreciation reserve accounts. In the future, close follow-up of disposal authorities and periodic analyses of retirement clearing accounts should be maintained so as to insure that all retirement transactions are reported and handled on a current basis.

# II. Salaries and Wages

# Badge and Tool Clearance Procedure Not Properly Followed—Findings

In order to prevent employees from claiming final pay checks without obtaining badge and tool clearances, Standard Procedure II, c, 2—R requires foremen to write "Hold" on the checks of all employees who have not worked at least seven hours during the week in which the roll is paid. Tests of undistributed hourly payroll checks for the pay period ended March 4, 1951, disclosed 27 cases where foremen had failed to designate those checks to be held, although the employees' clock-cards indicated that no hours had been worked in the succeeding week during which the roll was paid. Since Standard Procedure II, c, 2—R has replaced the timekeeper's "five-day list" as a means of preventing employees from leaving the Company without badge and tool clearances, it is important that foremen discharge their responsibilities under this procedure.

In certain cases, payroll checks not requested by foremen are transmitted directly by the payroll section to the unclaimed pay custodian. There was no procedure in effect to cover the identification and withholding of checks in those cases where employees had not worked the required number of hours in the week during which the roll was paid.

#### Action Taken

The payroll supervisor issued instructions that all checks not requested by foremen are to be compared with timekeeping records before being transmitted

to the unclaimed pay custodian. Also, these checks are to be marked "Hold" in those cases where employees have not worked the required number of hours.

#### Recommendations

It is recommended that plant management take the necessary steps to insure that foremen are reminded of their responsibilities under Standard Procedure II, c, 2—R, and that foremen understand the importance of withholding checks from employees until the required number of hours have been worked. Compliance with this procedure should be tested periodically by examining the undistributed checks of employees.

#### III. Accrued Taxes

# Sales Taxes Incorrectly Accrued—Findings

Accrual of state sales taxes has been incorrectly handled in several respects. It has been the practice to accrue taxes on shipping supplies and certain used materials, although such materials are exempt from sales taxes. In January, 1951, taxes approximating \$100 had been incorrectly accrued on these

types of materials.

In other cases, tax accruals have been erroneously omitted. For example, sales tax has not been accrued on billings from other company locations for nonproductive materials received on interplant shipping documents or for assessments covering stationery supplies. Also, no tax consideration has been given to materials billed with work order charges from other locations. It was found that the tax liability for the month of December, 1950, was understated by at least \$475, principally as a result of failure to accrue taxes on materials used in building construction and maintenance. Inasmuch as there were substantial work order charges for building construction during the latter part of 1950, it is probable that a considerable additional tax liability exists for materials used for this purpose.

Tests indicated that incorrect tax handling has been accorded certain of the

foregoing types of transactions since January, 1950.

If sales taxes are to be properly reported and paid, it is important that instructions contained in CM 72.90.26 be followed in all respects.

#### Action Taken

The plant controller issued instructions providing for centralized review of all interplant shipping documents, work order charges, etc., for purposes of accruing sales taxes.

#### Recommendations

It is recommended that, in the future, periodic review be made of the various types of transactions subject to sales tax to insure that the provisions of CM 72.90.26 are being followed in preparing monthly tax accruals. To the extent practicable, transactions since January, 1950, should be analyzed to determine the correct tax liability. Then, necessary adjustments should be recorded and tax reports amended accordingly.

#### IV. Internal Control

# Need for Strengthening Internal Control—Findings

Deviations from prescribed procedures and recognized principles of internal control and inaccuracies in the charts prepared in connection with the Company's internal control review program were noted, as follows:

1. Duplicate listings of cash received in the mail (Form 1064) were not being checked by the plant controller with entries in the cash received record. CM 48.20.11 provides that this verification is to be performed by the resident accounting executive.

2. Custody of blank working fund checks and maintenance of the register for control of these checks were the responsibilities of an employee also engaged in processing vendors' accounts payable invoices. According to the internal control charts, custody and control of blank working fund checks were

the responsibilities of the general ledger unit.

3. The check auditing function was being performed by an employee in the accounts payable unit. Existing procedures require that this function be performed by personnel not otherwise involved in accounts payable processing.

4. The internal control chart covering accounts receivable procedures showed that stock shipping orders and standard equipment sheets were being cleared after these documents were processed and the transactions booked. It was found, however, that the documents were being cleared from the registers when received from the shipping department and before processing was performed. This handling is contrary to CM 51.10.15.

5. It has not been the practice to compare quantities shipped, as shown on gate release copies of stock although the internal control chart indicated that

this function was performed.

#### Action Taken

With the exception of Item 3, the plant controller issued written instructions providing for correction of the above deficiencies in internal control and for the revision of internal control charts where necessary.

#### Recommendation

In regard to Item 3 above, it is recommended that responsibilities be realigned so that the check auditing function will be performed by an employee who is not otherwise engaged in accounts payable or disbursement functions.

Yours very truly,

(signed) P. L. Robey General Auditor

In view of the recent changes in the organizational structure of The Dolphin Manufacturing Company, Mr. Robey definitely believed that his immediate internal audit objectives were at least threefold. First, it was necessary to see that the accounting regulations and procedures as established by the central controller's office were properly followed by the various company divisions and operating units. Second, it was important to observe that effective internal control was maintained in the form of appropriate organizational checks and balances in the company's disparate units. And, third, to perform its activities to most constructive advantage, the internal audit department had to earn wholehearted management cooperation and acceptance. Thus, once an audit report was completed, the question of who should do what about the deficiencies mentioned naturally became a management control problem of the first magnitude.

Outline a procedure which you would recommend for the audit follow-up of a report similar to the one presented above. To what extent is your suggested procedure influenced by the (a) organizational position of the internal audit department in the Dolphin company (that is, would it make any difference if Mr. Robey answered to the controller rather than to the vice-president of finance?), (b) by the use of the post audit, pre-report "Audit Conference" described by Mr. Robey, and (c) by the particular administrative problems arising from the Dolphin company's reorganization?

## THE WESTCO OIL COMPANY

# Functional Internal Auditing Activities

This case deals with interpretation of operating data and the propriety of action by the internal audit department.

Until the latter part of the 1930's the internal audit department of the Westco Oil Company, an integrated producer, refiner, and national distributor of petroleum products, was concerned with such traditional auditing activities as vouching assets, counting cash, testing arithmetical accuracy of footings and extensions, and checking distributions. It was not until Mr. Henry Boynton, a capable and imaginative accounting executive, with refinery experience, was brought East and made head of this department that internal audit activity in the Westco company began to break away from its humdrum past.

Boynton was convinced that the internal auditing function was "more than treasury—it is operations." But he recognized that before he could accomplish his broader objectives he had to win the confidence of the company's operating personnel. Consequently he first picked several of the best men he could find to staff his department, selecting men with experience in the company's marketing, refinery, and transportation operations. Then he looked around for something that might dramatize the value of "managerial" internal auditing as an appraisal activity with a company-wide scope.

Thus he spotted the fact that one refinery was billing oil to company customers at its actual temperature of 160 degrees Fahrenheit without first converting to the customary 60 degrees, thereby inadvertently taking advantage of temporary heat expansion. In another instance he was able to point out inefficiencies in the scheduling of barge operations. In still another situation, Boynton's suggestion that the temperature of the end product be raised led to increased output at one of the company's refineries.

All these suggestions were made in a friendly, constructive fashion

and it was not long before the internal audit department became an influential force in the Westco company organization. Although Henry Boynton was later promoted to a financial officership, internal auditing at Westco had definitely established itself as something far beyond routine checking.

The latest manager of auditing, Mr. Frank Ray, was a dynamic individual with an actor's sense of timing who had impressed his own strong personality upon the Boynton tradition. As manager of auditing, Mr. Ray reported to the controller who in turn, along with the treasurer of the company, answered to Mr. Dearborn, the vice-president of finance. Mr. Dearborn was one of seven other vice-presidents who reported to the president of the Westco company.

The headquarters staff of the Westco company's audit department consisted of five or six persons with approximately twenty additional auditors on traveling assignments between the seventy-odd company audit points. In keeping with the Boynton tradition, the department had an unlimited scope for its activities and accordingly, in the words

of Mr. Ray, "audited operations directly."

One of the primary objectives of the internal audit program, which helps to explain its effectiveness, was the training of young men of executive caliber, primarily for future accounting and financial positions, such as that of treasury manager in one of the various sales divisions or refineries. Audit personnel were selected from within the company's own ranks, largely because of the desirability of having men who already know something about the company's operating procedures and partly because the department's past experience with several auditors selected from the outside had, in general, proved unsatisfactory.

Since an appointment to the internal audit staff was usually acknowledged throughout the company to constitute a major promotion, the manager of auditing could be very selective in his choice of personnel and he accordingly maintained a file of carefully screened candidates from whom he made his appointments whenever a suitable opening developed. The audit staff at Westco thus consisted of men who had had some prior experience in the company's treasury operations in one or more fields such as marketing, refinery, production, transportation, and the like.

After perhaps three or four years of internal audit service, those men who had proved themselves would be promoted to other company positions, usually in the financial or accounting areas. Those who failed to measure up fully to expectations would, if retained in the company, benefit from their auditing experience wherever they might be assigned. In other words, the company had no "career" auditors.

Every new auditor was given a preliminary training course at the home office where he was introduced to the top executives as well as to the special requirements of his new assignment. An audit manual had been prepared, but presumably as a guide only, for the auditor was expected to do his own thinking on the job. Mr. Ray made it his responsibility both to keep progress reports on each man and also to know each auditor's personal background and distinctive abilities so that his field assignments could be made in terms of the needs of both the auditor and the field audit point.

Usually the audit was performed by a team of three, led by the man best qualified for the particular assignment. The audit team conducted a post audit conference at the audit point, at which significant findings and remedies were discussed with local management and visiting home office officials.

Auditors also frequently sat in at staff meetings which broadened their grasp of various problems at the locations audited. As Mr. Ray expressed it, the internal audit department was considered a doorway to a better job, particularly as the company subscribed whole-heartedly to the belief that the auditor with business "savvy" could save money for the company and, in the process, earn himself a better position.

The home office of the Westco Oil Company, like those of many of the nation's leading petroleum companies, was in New York City. Mr. Ray's office was also here as were those of the company's top executives. The company, for administrative purposes, had divided the country into a number of sales divisions. Typical of these was the company's Midwestern branch, including the states of Missouri, Iowa, Illinois, Indiana, and Kentucky, with the divisional offices in St. Louis. The division manager, who answered to the vice-president of marketing at the New York office, was given considerable discretionary authority by the Westco company.

In addition to the division manager, who had over-all responsibility for the day-to-day operations and affairs of his division, there was a division sales manager, a manager of industrial relations, an operations manager, and a treasury manager. Under the division sales manager one might follow the line of sales authority down through a

district sales manager, a sales supervisor, and to various salesmen who dealt directly with the independent service station operators.

The various treasury operations, including the accounting function, were the responsibility of the division treasury manager. It was to him that the chief accountant would answer, as would the division auditor who periodically reviewed bulk plant operations and certain division office transactions. The approach of Mr. Ray's auditors from New York was through the records at division headquarters, which in turn offered many leads to productive investigation in the field, that is, at bulk plants. These bulk plants were storage and distribution centers, as distinguished from the company's several refineries, which fell under a separate major department headed by the vice-president in charge of manufacturing operations in New York City. As mentioned previously, the New York office scheduled approximately seventy separate audit points, made up of marketing, manufacturing, production, and pipe line branches throughout the country, all of which were visited very nearly once a year.

The following illustrations are indicative of the kind of audit findings which Mr. Ray had in mind when he spoke of "auditing operations directly." These illustrations are taken from three different audit reports, each of which covered an investigation of one of the company's sales divisions. The first of these examples is indicative of what Mr. Ray believed an imaginative audit of payrolls could accomplish.

Payrolls: High overtime earnings of operating employees reported in the last audit have continued. Ratio of overtime to base wages for two recent years is shown below:

		Ended 30, 1947		Ended 30, 1946
	Amount	Ratio to Base Wages	Amount	Ratio to Base Wages
Base Wages Total Overtime Overtime Excluding That Guaranteed by Union	\$385,400 131,500	34%	\$289,000 109,800	38%
Contract to Drivers	90,500	24	81,800	28

Overtime was incurred principally by auto mechanics and union tank truck drivers in the metropolitan Los Angeles area. During the first four months of 1947, auto mechanics averaged \$106 a month overtime and union tank truck salesmen averaged \$68 a month in excess of guaranteed overtime.

Large overtime earnings of auto mechanics were attributed to frequent repairs necessary to keep old trucks operating. Replacements and additional equipment could not be obtained and more auto mechanics were not available.

Tank truck salesmen in metropolitan Los Angeles worked long overtime hours in transporting gasoline from the north Los Angeles terminal because of the shortage in tank cars and the unavailability of union truckers. Aviation business which increased considerably was handled with insufficient trucks and personnel, and the shortage of Westco cylinders required more frequent delivery at out-of-schedule hours.

As a result of high overtime, earnings of the following employees exceeded

the salaries of their supervisors during the first four months of 1947:

- 1		Base	Average	Ear	nings
Employee	Classification	Wages	Overtime	Total	Supervisor
A B C D	Mechanic Tank Truck Salesman Tank Truck Salesman Tank Truck Salesman	\$260 310 312 313	\$231 169 156 112	\$491 479 468 425	\$431 376 376 376

Various measures to alleviate this situation are being explored.

An examination of the CREDIT function in the Chicago sales division brought to light the following conditions:

Credit Violations: Need for improved credit control was evident from numerous extensions of credit in excess of established limits and failure to renew and revise terms. A similar condition was reported in the last audit.

Balances outstanding from tank car customers exceeded established credit terms for fifty-one accounts. Examples are:

Contamo	Credit	End-c	of-Month Bala	nces	Max. I	Balan <mark>c</mark> e
Customer	Limit	Sept., 1947	Aug., 1947	Jul., 1947	1947	Amount
Deere Inc. C. S. Gans C & M Mfg.	\$50,000 9,500	\$127,504 16,699	\$70,788 10,111	\$84,743 8,761	Sept. 31 Aug. 21	\$127,504 17,562
Co. Myles Co.	3,000 4,000	10,403 8,002	4,911 8,104	9,731 8,629	Sept. 30 * July 31 *	10,403 8,629

<sup>\*</sup> Lacks home office approval required for balances over \$5,000.

Following are examples of expired credit authorization on larger tank car accounts requiring home office approval:

Account	Credit Limit	Expiration Date
Deere Inc. D & E Railroad Linden Can Corp.	30,000	March 1, 1947 June 15, 1947 June 15, 1947

At September 30, 1947, sixty-two account balances represented unauthorized sales by G. A. Longman, Evanston, Ill., distributor. These balances amounted to \$1,010 but were protected by September, 1947, commissions payable of \$2,305.

Control of credit violations was further weakened by failure of the book-keeping section to inform the credit department of violations currently. This

has been corrected.

Credit terms will be reviewed and revised where justified, taking into consideration the harvesting season when some accounts normally become delinquent. Where it is impracticable to allow increased credit, payments will be required to hold balances within authorized limitations. The practice of allowing unauthorized deliveries by distributors and then making deductions from commissions payable, if account is not paid within a reasonable time, will be discontinued where practicable. Instead, distributors will be instructed to remit currently to Westco for unauthorized credit sales and carry customers' accounts on their own books.

This last excerpt, taken from the New Orleans sales division audit report, suggests merely one of the possible directions in which a study of the Transportation function can lead. For example, the auditor in an earlier report on the New Orleans division made a study of the respective costs of renting barges as compared to outright ownership. On the basis of the auditor's finding, the Westco company had under consideration the purchase, rather than the rental, of its own fleet of barges.

Barge Movements: Control of variations on barge receipts was weak. No investigation or follow-up of variations over one per cent was made for several months even though the required monthly reports of such variances were prepared. Large differences were frequent. For example:

Barge	Origin	Destination	Date Unloaded	to Shor	Tank e Tank (Gain)	Product
				Gallons	Per Cent	
18 39 39 21 39	Baton Rouge New Orleans New Orleans Natchez New Orleans	Vicksburg Memphis Natchez Pine Bluff Memphis	10/5/47 10/30/47 10/2/47 8/30/47 5/9/47	11,335 2,013 (1,511) 8,691 (2,454)	2.3 · 4.6 (1.8) 3.9 (3.0)	Gasoline Gasoline Gasoline Prem. Gas Prem. Gas

Barge 21 from New Orleans was unloaded at Alexandria on May 22, 1947. Loss on the movement appeared reasonable—1,453 gallons or .3% of the cargo—but was subject to question in view of a loading loss of 5,126 gallons and an unloading gain of 3,171 gallons. Terminal superintendent noted on the barge report that barge had three leaks in the seams and gasoline was running into

the river. He suggested that the barge be repaired before reloading. Home office was not notified of this condition.

Improved handling is anticipated from close scrutiny of barge reports and reinstatement of follow-up procedure.

Mr. Ray continually reviewed company operations with the members of his staff in order to revise his audit coverage to meet such problems arising in the course of company activities as those illustrated above. One of the problems which he had under review at present was whether he should instruct his auditors to make an analysis of budgeted as contrasted with actual marketing expense connected with the acquisition by the various sales divisions of new service station outlets.

As is usual in the oil industry, the Westco company has several different contract arrangements with its numerous service station dealers covering the sale and distribution of Westco products. Reports on the selling cost per gallon were periodically developed by the accounting department on the basis of rent equivalents for each type station. However, Mr. Ray noted that these reports covered only three types of service station arrangements, designated as commission, three party lease, and direct lease. There was no report on a fourth type of dealer situation, covering newly acquired stations which were modernized at Westco's expense on the condition that the dealer convert to Westco's products. Believing that inadequate control might exist as a result of this omission, Mr. Ray decided to have his auditors make an analysis of budgeted and actual costs from the standpoint of economic justification for the newly acquired stations in the Midwestern sales division. The following detailed data have been taken from the audit work papers filed in support of a final report (see Exhibit 1).

What, if anything, do these data show?

What action, if any, should be taken on the basis of these data?

If you were the auditor who had compiled this information, how would you present your findings to Mr. Ray, the manager of auditing?

How should Mr. Ray report these findings to the controller and interested vice-presidents?

Was this investigation of newly acquired service stations, as well as of payrolls, credit violations, and barge shipments, properly within the scope of the internal audit program?

EXHIBIT

Dealer Station Acquisitions-St. Louis Division, Aug. 31, 1950

	-	1949-50	Comple	1949-50 Completed Expenditures		Gallonage per Mth	per Mth.			Cents per Gal.	er Gal.	Over
Dealer	Budget Ref.	Budget	Non- budget	Expense	Total	Est.	Actual	Mths.	August	Est.	Actual	or (Under)
1. Clinton, Mo., J. Beneki	31-3	510	65	1,185	1,760	5,000	2,100	63	2,100	.30	.70	.40
2. Joliet, Ill., W. Hall	31-57	2,757	ı	3,095	5,852	10,000	15,751	∞	20,985	.75	.47	(.28)
3. Kirkwood, Mo., D. Perry	31-71	1,840	22	2,010	3,875	8,000	6,270	∞	6,600	.62	77.	.15
4. Peru, Ind., F. Obeleski	7	1,559	35	584	2,178	9,175	6,787	9	7,290	.21	.44	23
		290	10	130	430							
	(030)				1,000							
5. Zion, Ill., P. Palmer	31-39	1,160	1	1,830	2,990	7,500	6,765	∞	10,560	.50	.55	.05
6. Ludlow, Ky., A. Cowden	70-70X	1,345	10	1,250	2,605	7,000	4,771	7	7,920	.49	89.	.19
7. Sedalia, Mo., L. Salamanca	41-65	1,805	10	1,889	3,704	7,500	2,947	9	5,245	.62	1.57	.95
8. Waterloo, Ia., W. Brewer	41-39	1,903	1	1,400	3,303	8,000	10,811	∞	14,130	50	.38	(.12)
9. Pekin, Ill., G. Franceski	51-1	1,993	ı	1,465	3,458	7,500	3,960	∞	3,960	.61	1.09	.48
10. Marion, Ind., S. Frederick	51-38	1,801	1	1,755	3,556	8,300	2,490	4	3,000	.56	1.91	1.35
	(030)				250							
11. Paducah, Ky., M. Somerset	41-41X	1,036	1	1,320	2,462	6,750	5,700	∞	3,960	.43	45	.11
12. Mason City, Ia., B. Fish	91	937	235	1,307	2,479	7,000	6,992	∞	8,969	.43	.44	.01
13. Long Creek, Ill., C. Cole	61-106	574	232	1,247	2,053	5,000	2,368	∞	3,180	55.	1.08	553
14. Moberly, Mo., R. Chico	61-123	601	140	610	1,351	8,350	9,895	∞	23,640	:21	.42	27
	(030)				2,000					Av.	Av.	
					45,306	105,075	87,607		•	.49	.62	

NOTES: (a) Budget—equivalent to capital expenditures, like a new pump.

(b) Nonbudget—equivalent to capital expenditures, except the item is used (second hand).

(c) Expense—items like repairs and resurfacing.

(d) (030)—a special account classifying the item as in the nature of a loan or prepaid expense, the unamortized portion to be repaid in the event the lease is terminated.

(e) Months-in operation since acquisition.

# Accounting Policy

ONE OF THE MOST IMPORTANT PARTS OF THE CONTROLLER'S JOB IS TO develop the accounting policy required to provide management with the information it must have, if it is to function satisfactorily. At the same time the policy must comply with the standards developed by the accounting profession and the requirements imposed by various regulatory and tax collecting agencies. Cases in this section raise, among others, such major accounting questions as inventory valuation, depreciation policy, and the effects of price level changes on financial reporting to management, stockholders, and interested parties outside the business enterprise.

- 16. Consolidated Leather Company
- 17. Balford Automotive Parts, Incorporated
- 18. Terrini Construction Company
- 19. Shipstead Electronics Corporation
- 20. Bighorn Drilling Company
- 21. The Reece Corporation
- 22. The Pan American Company

## CONSOLIDATED LEATHER COMPANY

Selection of Method of Inventory Valuation (LIFO)

This case is concerned with the deliberations of the management of a leather processing company in making a decision as to whether to adopt the last-in, first-out method of inventory valuation.

The management of Consolidated Leather Company was reviewing, early in 1953, the company's current policies in the area of inventory accounting. For many years the management had been concerned about the effects, on the company's reported earnings, of what it termed "inventory gains and losses." In almost every annual report to the stockholders since 1929, the president had called attention to the presence of this problem. The following quotations from the annual report for 1949 give some indication as to why the company's operations were subject to such inventory gains and losses:

Because of the long transportation period on imported raw materials, and the long tanning process itself, more than six months elapse from the time Consolidated buys raw goatskins in foreign markets until it sells the tanned kid leather. The company therefore always has a large inventory of raw, semi-finished, and finished skins, and net earnings are appreciably affected by changes in inventory value.

As has been explained, changes in the value of the company's necessarily large inventory exert an important effect on earnings, and a price decline of sufficient severity can turn an operating profit into a net loss. Despite the price gyrations of the past twenty years, the company operated profitably each year except for losses in three years resulting from declines in inventory prices.

Consolidated Leather Company was engaged in the processing of raw skins and hides into finished leather stock. The concern processed some seven to nine million skins and hides annually, about 80% or 90% of which were goat- and kidskins; the remaining 10% to 20% consisted of various classes of cow- and horsehides. The com-

<sup>&</sup>lt;sup>1</sup> During recent years, the non-goat and non-kid volume had accounted for an increasingly greater share of the total.

pany's annual volume of goat- and kidskins constituted approximately 25% of the total number of such skins processed each year in the United States.

The company specialized in producing leathers for manufacturers of ladies' shoes and handbags, and over 75% of the concern's sales were made to that group. The remainder went to producers of miscellaneous leather goods primarily for upper leathers for men's shoes, in both domestic and export markets.

Consolidated Leather Company's operating organization consisted of four tanneries and five trading divisions which were set up primarily on a product basis. These divisions, and the types of leather sold by each, were as follows: <sup>2</sup>

- 1. Standard Division—Black and Colored Suede and Colored Glazed Kid.
- 2. Centerville Division—Colored Glazed Kid and Crushed Kid.
- 3. Oyster Bay Division—Black Glazed Kid.
- 4. McLean Division—Colored Glazed Kid (primarily browns and blues).
- 5. Braintree Division—Novelty Kid, Patent Kid, Slipper Colt, and Patent Side Leathers.

For merchandising purposes the management classified finished leather stock into two broad groups which were designated as (1) "style" merchandise and (2) "staple" merchandise. The first category consisted of all the items for which the demand was markedly influenced by the factor of style. In this group were all of the "colored" glazes (including blacks and conservative browns and blues), the novelty leathers, the patent kid, and most of the colored suedes. The "staple" group consisted of the black and conservative brown and blue glazed kids, the patent side leather, the slipper colt, all the black suedes and a few of the more conservative colored

<sup>&</sup>lt;sup>2</sup> Glazed kid is processed from the exterior or grain side of the goat- or kidskin; its name is derived from its very smooth surface. Suede is a very soft finish produced by processing the flesh side of the skin. Novelty kids include very fancy finishes such as a 24 kt. gold lace superimposed on a colored, glazed, or suede kid (these novelty finishes are used primarily for ladies' party shoes and handbags). Patent leather is also processed from the exterior side of the skin or hide; it has a lacquer or varnish finish which bears a brilliant polish. Slipper Colt is a leather processed from the hides of colts and used primarily for house slippers. Side leather is processed from cowhide or calfskin. Crushed kid is a soft finish processed from the exterior of the goat or kidskin.

suedes. The company's sales had for many years been so concentrated in the colored leathers of the "style" group that, throughout the leather industry, it had established a reputation of being a "color house."

The cowhides and colt hides, from which the company processed side leather and slipper colt leather, came from both domestic and foreign sources. The goatskins and kidskins, however, were all imported. The principal geographical areas which in the past had provided the goatskins and kidskins were India, Pakistan, China, North Africa, the East Indies, Spain, the Balkan countries, and Brazil. In recent years, however, imports from China and the Balkan countries had sharply declined because of difficulties imposed by the extensive political changes taking place in those areas.

As already stated, one of the chief problems confronting the management of Consolidated Leather Company was the control of its large investment in inventories, and the interpretation and reporting of operating profit to give proper reflection to inventory price changes. The significance of this item to management can be judged from the fact that inventories usually amounted to from one-third to one-half of the dollar value of the company's total assets. A variety of factors contributed either directly or indirectly to the

company's large inventory requirements.

Perhaps the greatest single factor influencing the amount of the company's inventories was the length of its supply "pipeline," or, in other words, the time that expired between the date raw skins were contracted for and the time when finished leather stock could be shipped to the company's customers. Four months usually passed from the time raw skins were purchased in the foreign markets until they were available in the company's tanneries. An additional six weeks to two months were required for processing and delivering the finished leather to the selling divisions. Since the selling divisions normally carried inventories equivalent to about one month's sales, the company's complete supply "pipeline" was typically six to seven months long.

In order for Consolidated's customers to convert finished leather into shoes, handbags, and other consumer products and make sufficient deliveries to insure that their retail outlets were fully stocked at the beginning of any particular consumer buying season, the finished leather had to be available in their factories at least four to six months prior to the opening of a season. The total elapsed time, then, between the contracting for raw skins and the sale of shoes, handbags, etc., to the final consumer, was about ten to twelve months. It was necessary therefore, that the company's buyers be able to anticipate, as much as a year in advance, the types and colors of leather that would be the fashion in a particular season. Its policy of concentrating in leathers for highly styled merchandise made this buying problem particularly difficult for Consolidated Leather

Company.

Although a large percentage of raw skins purchased could be used for several different types and colors of finished leather, there were skins of certain qualities, or from certain geographical areas, which were more suitable to particular finishes or colors of leather stock. Suede, for instance, was normally processed from a different type of skin from that suitable for a glazed finish of a light color. When hides purchased specifically for processing to one particular finish were diverted to another type of finish to meet a shift in consumer demand, such diversion usually resulted in higher costs for the finished leather stock. For example, if a particular type of skin, purchased for a certain finish, was used for a leather which could have been processed more easily from a different type of skin, increased tanning costs were incurred, and the company was placed at a cost disadvantage for its finished leather, unless, of course, most of its competitors had found it necessary to make similar reroutings of raw materials. It was the company's policy therefore to buy sufficient quantities of skins of various qualities and characteristics to avoid, as far as possible, the added costs of diverting raw materials. This policy was, in effect, a second factor contributing to the company's large inventory investment.

A third factor which greatly influenced the company's buying policies and tended to increase the size of its inventories was the lack of stability in the supply of raw skins in the import markets. The markets sometimes ran the gamut from being completely "dried-up" to being thoroughly saturated within a period of a few months without any satisfactory degree of predictability as to which of these extreme conditions might be expected next. To reduce the chances of being caught short on raw skins, the company made it a practice

to assure itself of the necessary quantities by building up stocks in

periods when the supply was plentiful.

Another raw material factor had a marked influence on the company's procurement and inventory policies. This element, the sharply fluctuating prices of imported goatskins and kidskins, tended to exert an opposite influence on the size of the inventories, however. The following example serves to illustrate the difficulty of trying to cope with this factor. Skins which the market quoted at \$18 to \$20 per dozen in January of 1951 were quoted in March, 1952, at about \$4.50. By the end of 1952, however, the prices of these same skins had recovered to around 50% of their 1951 peaks. To minimize losses due to these fluctuations, the management's policy in this respect was to buy as conservatively as it possibly could and still be assured of the necessary quantities of raw materials to meet its needs. Since periods of good supply of raw material did not necessarily mean that the prices were especially low, there was often a conflict between the company's policies for dealing with the two factors of market supply and market price, with the result that the management was continually striving to maintain a delicate balance between running into raw material shortages, on the one hand, and what Mr. Fred Jamison, the controller, referred to as "losing our shirts," on the other.

Mr. Jamison emphasized that the company's "over-all management policy" was "to make its profit by efficient manufacturing and vigorous selling and not by 'gambling' on inventory gains or losses." But the complications involved in maintaining inventories at optimum levels had made it practically impossible for the company to eliminate completely the element of "gambling." For many years, therefore, one of the management's chief concerns had been the effects of inventory gains and losses on the company's reported profits.

In each of the years 1929, 1930, 1931, 1934, 1937 and 1938, the president had commented in the company's annual report to stockholders on the "substantial" or "marked" write-offs of inventories made necessary by sharp breaks in raw skin prices, while in the annual report for 1933 he called to the attention of the company's stockholders that "a substantial portion of the profits [for the year] is attributable to the rising market which has existed since the early

part of 1933." The importance that the company's management attached to the problem of inventory gains and losses can be seen from the following quotation from the president's comments in the annual report for 1935:

Unless there should be monetary adjustments by those countries now on the gold basis, there is but little likelihood of any substantial loss in our raw material inventory which is generally the most serious problem with which we have to contend.

As a step in the direction of minimizing the effects of inventory gains and losses on earnings reported to stockholders and for tax purposes, the board of directors decided to adopt, beginning with the fiscal year ended June 30, 1940, the last-in, first-out (LIFO) method for valuing the company's inventories. This decision followed the authorization, by the Revenue Act of 1938, of the LIFO method for federal income tax purposes. The 1938 act authorized the use of the LIFO method in filing tax returns provided that the taxpayer:

- 1. Files the required form with his tax return for the first year in which LIFO is to be used, indicating an irrevocable election of the LIFO method;
- 2. Carries his inventories at cost (*not* the "lower of cost or market") while he is on LIFO;
- 3. Recomputes the closing inventories of the year preceding the change to LIFO on a cost basis;
- 4. Uses the LIFO method in his other financial statements, e.g., stockholder reports, for the year in which LIFO is elected and for all succeeding years; and
- 5. Agrees to such adjustments in the application of the method as the commissioner may deem necessary to reflect income clearly.

In order to comply with requirement (4) above, the company used the LIFO method of inventory valuation in the preparation of its semiannual report to stockholders as of December 30, 1939. Although the primary reason for the adoption of LIFO at this time, as explained by the controller, was the apparent tax savings which would accrue to the company as a result of the change, the president, in the following excerpt from the December 30, 1939, semiannual re-

port, pointed out other benefits the company expected to gain from the use of the method:

This method should result in steadier earnings in the future, without extraordinary peaks and valleys. It should avoid the possibility of earnings based upon inflated values which are rarely realized and will lessen the likelihood of substantial losses in the future since the inventory was valued on a comparatively low level.

By the close of the company's fiscal year ending June 30, 1940, however, goatskin prices had dropped so sharply that the inventory value under the LIFO method was considerably above what it would have been under the conventional "lower of cost or market" method which had been used by the company in prior years. Since the irrevocable step (see requirement (1) above) of filing the tax returns under the LIFO method had not yet been taken, the directors decided to postpone the adoption of the new method until a more suitable time.

For its fiscal year ending June 30, 1941, Consolidated Leather Company showed a very favorable profit figure. But the management, as it had in connection with the profit for 1933, attributed a good share of the 1941 profit to "inventory gains." To avoid reporting any such inventory gains in the company's financial statements for the following fiscal year, the president, in the semiannual report as of December 30, 1941, announced that the company would adopt the LIFO method of inventory valuation for the fiscal year 1942.

In the company's annual report for the fiscal year ending on June 30, 1942, however, the president made the following statement.

Price ceilings on leather, together with reduced demand for goatskins due to government restriction of production, have caused a drop in goatskin values to a point somewhat below the valuation on the "last-in, first-out" principle. We have therefore found it desirable to value our goatskins inventory on the basis of the lower of cost or market and to abandon the last-in, first-out method used on our semiannual report.

Accordingly, the company did not file its tax returns for the fiscal year 1942 on the LIFO basis.

Because of wartime shortages of raw materials from 1942 through 1945, the physical quantities of the company's finished leather inventories decreased considerably. The management recognized by 1943 that, since both raw material and labor prices were likely to be generally higher during that period of inventory liquidation than

they had been during the period just prior to 1942 (when the inventory was being accumulated), the company's reported profits would probably reflect a gain on the liquidation of these inventories. It also recognized the likelihood that the finished leather inventories would have to be replaced, when the shortage of raw skins became less acute, at somewhat higher raw material and labor costs than those represented in the inventories liquidated. The management therefore, in anticipation of these developments, reserved out of profits during those three years (1943, 1944, and 1945) an amount sufficient to cover the higher costs of replacing the inventories. Then, during each of the years 1946, 1947, and 1948, as finished leather inventories were replaced, it became necessary to transfer amounts from this reserve to the profit for the year to offset the effects of the higher costs of replacing the liquidated inventories. The management felt that the necessity for making these transfers "proved the wisdom of our having established the reserve in the earlier war years."

The removal in 1946 of price controls and other government restrictions on the purchase of raw skins and hides was followed by marked increases in the prices of both the company's raw materials and its finished leather. Commenting on this development in the annual report for the fiscal year ended June 30, 1947, the president made the following statement:

Our sales were on the replacement basis <sup>3</sup> and a large part of these sales were from goods purchased before the price rise, thus resulting in abnormal profits. These profits are likely to be offset in part by inventory losses when the price trend reverses itself and it is for this reason that we set up on December 31, 1946, the "Reserve for Possible Future Price Declines on Raw Skins and Hides."

The purpose of this reserve, as explained in the company's notes to its financial statements in the 1947 annual report, was to deduct from profits for the year an amount sufficient to "reduce the inven-

<sup>&</sup>lt;sup>3</sup> Mr. Jamison, explaining the meaning of the term "replacement basis" used by the president in this quotation from the annual report for 1947, said that the company, in setting its prices, recomputed the cost of goods sold so that all raw materials included in the merchandise sold were valued at approximately the prices prevailing at the time the merchandise was sold. He stated that the prices used only approximated actual replacement prices because the recomputation was made as of the time the finished leather was transferred from the tamneries to the selling divisions. Since these divisions normally carried about a month's supply of finished stock, the actual replacement prices at the time of sale might be slightly different from those at which the inventory transfers were made.

tory at June 30, 1947, to approximate last-in, first-out basis." This practice was continued through June 30, 1950. The company did not, however, adopt the LIFO method for tax purposes during that

period.

For the fiscal year ended June 30, 1951, the directors of Consolidated Leather Company, believing that raw material prices were as low as they could be reasonably expected to fall, in view of the price levels of other commodities, again decided to adopt the LIFO method for federal income tax purposes. Exhibit 1 represents the company's efforts to explain to its stockholders the implications of this move and its immediate effect on the year's profits and on certain balance sheet items.

By early 1952, however, the raw material market had again broken sharply, and the board of directors once more reversed its decision to adopt LIFO for tax purposes. In this connection, the president, in April, 1952, wrote the following letter to the company's stockholders:

TO THE STOCKHOLDERS OF CONSOLIDATED LEATHER COMPANY:

# Change in Inventory Method:

In reporting to you the operating results for the fiscal year ended June 30, 1951, and the six months ended December 31, 1951, the company used the LIFO (last-in, first-out) method of valuing part of its inventories. As explained in the Annual Report, this valuation was equivalent to the cost of the skins and

hides we owned on June 30, 1950.

When it was decided to use LIFO, it was thought that the base prices—cost at June 30, 1950—were reasonably low in view of the value of the dollar and of the price levels for other commodities. This proved to be wrong. On December 31, 1951, as stated in the "Inventory Note" on the Semiannual Report, the LIFO inventory was \$350,000 above the prevailing market. Since December 31, there have been further declines, so that if the company had continued to value its inventories on the LIFO basis the inventories would have been considerably overstated and the profits correspondingly distorted.

Ordinarily, the LIFO method of inventorying, once established for tax purposes, cannot readily be changed. However, because of special circumstances resulting from the retroactive changes in the tax laws for the calendar year 1951, the due date for the filing of the final tax return for the fiscal year was extended to March 15, 1952. Therefore, according to the company's understanding of the tax laws, it is permissible to abandon LIFO and resume the former method of pricing inventories. Amended tax returns have now been filed with

inventories stated at the lower of cost or market.

Attached hereto is a memorandum (Exhibit 2) showing the operating results for the year and for six months as originally reported on the LIFO method and as restated on the former method of inventory valuations. As in the past, adjustments have been made in the Inventory Reserve which result in stating the profits on a replacement basis.

In its annual report for the fiscal year ended June 30, 1952, the company therefore announced that it had reverted to its practice, started in 1947, of establishing a reserve to "reduce the inventories of skins and hides to an approximate last-in, first-out basis (as of June 30, 1946) without adopting this principle for federal income tax purposes."

The controller emphasized the fact that the company's "in and out" approach to statutory LIFO was strictly a reflection of efforts to minimize tax payments to the extent feasible. He pointed out that for the concern's "over-all management policy," it had since 1947 followed methods which approximated LIFO. He felt that some method similar to LIFO was absolutely necessary if the company was to adhere to its professed philosophy of conservatism in profit reporting. The controller reiterated that the company's "top management" policy was "to earn its profits by efficient manufacturing and vigorous selling and not from 'gambling' on inventories." He thought that if "purely inventory profits" were allowed to appear in the company's reported earnings, the stockholders were not being given a true picture of the "real profits resulting from operations." He stated that the company's past experience had adequately proved that such inventory gains were only temporary and would be offset by inventory losses later when prices began a downward movement.

Mr. Jamison also pointed out that the board of directors and management of the company wanted the prices of the company's stock, as quoted on the New York Stock Exchange, to reflect the stability of the company's earnings from operations and a steady dividend policy. He said that Consolidated was generally known as the "best leather stock" on the market and that the board was eager for the company to maintain that reputation. He did not believe the company's stock would be so highly regarded if reported earnings were made a function of raw material prices, as he thought would necessarily be the case unless some attempt were made to match "current costs with current revenues."

The controller pointed out, however, that his company's attempts to establish a basis for steadier earnings and dividends had created some minor problems in stockholder relations. He said, for example, that one very small shareholder had taken exception to the deduction in the statement of profit and loss in the company's 1947 annual report of the \$550,000 labeled "Transfer to Reserve for Possible

Future Price Declines on Raw Skins and Hides." This particular stockholder was primarily interested in immediate cash dividends and interpreted the creation of the "Reserve for Future Price Declines" as merely an effort by management to keep down the net profit figure and, consequently, the company's dividend payment for the year. Mr. Jamison said that although the problem had been relatively minor in his company's case, the management had nevertheless felt obliged to review in some detail, in the 1948 annual report, its history of earnings and dividends over a number of years.

Mr. Jamison made it clear that for "management considerations other than those pertaining to taxes," he preferred the "replacement method" to LIFO. He explained that the chief difference he saw between the two concepts was that the LIFO method costed merchandise sold as if the units sold were the ones most recently purchased, whereas the "replacement method" valued goods sold at prices prevailing at the time of the sale. He thought, however, that the LIFO method provided such a close approximation to "replacement cost" that, where substantial tax savings were at stake, the tax factor might become overriding and tip the balance in favor of LIFO.

The controller said that one of the big disadvantages he saw in the LIFO method, from the point of view of company management, was that it made it difficult to compare the company's operating results with those of other companies in the industry. This difficulty, he explained, existed even in comparisons with companies using the LIFO method because of various dates on which different companies had adopted LIFO, or because of other differences in their LIFO inventory bases (for example, physical quantities included, and the like). He also thought that members of the investing public, whether they realized it or not, were faced with the same problem in trying to use reported earnings as a basis for appraising the merits of the stock of a LIFO company as a potential investment.

Mr. Jamison pointed out as a second disadvantage of LIFO the discrepancies that the method frequently produced between "interim" financial statements and those prepared to cover operations for the entire year. He explained that this difficulty arose from the fact that LIFO inventory quantities were sometimes partially liquidated early in the year and not replaced as of the "interim" date. Such liquidation, in any period where selling prices of finished goods

were based on raw material prices higher than those in the LIFO base, caused "interim" income statements to reflect "inventory gains." By the end of the year, however, LIFO inventory quantities would have been replaced and, therefore, the income statement for the entire year would not reflect the inventory gains which had appeared in the "interim" statements. Mr. Jamison said that in his company, where semiannual statements were prepared for both management and stockholders, it was sometimes difficult to explain why operations for the last half of the year were less profitable than might have been expected, judging from the earnings shown in the first six months of the year.

A third disadvantage which Mr. Jamison saw in the LIFO method was the danger that the tax factor, because of the immediate savings it would sometimes offer, might be allowed to overshadow other less obvious management considerations. He felt that if his own company were using LIFO for tax purposes, there might very well be times when the management would be sorely tempted to replace liquidated LIFO inventory quantities simply to avoid paying taxes on the gains from such inventory liquidation, when actually other considerations, such as market conditions, might indicate that the best course open to the company would be to pay the tax on the gains and maintain the inventory at the lower level. He thought that, whereas the nontax considerations would not be completely ignored by most managements, there would undoubtedly be times when the tax factor, because of its immediate dollar implications, would tend to receive more than its proportionate weight.

Mr. Jamison said that it was possible that Consolidated Leather Company had missed, perhaps early in the 1940's when finished leather and goatskin prices were relatively low (see Exhibits 3 and 4), its best opportunity to adopt the LIFO method for tax purposes. He did not think, however, that there was any way of determining how much better the company would have fared if it had adopted LIFO in the early forties. He pointed out that it would not be too difficult to approximate the difference between the company's actual profits and those that would have resulted under LIFO, if one accepted the inventory facts as they actually existed, but he emphasized that there was no way of knowing what differences would have appeared in the inventory figures if the tax factor had been present to exert its influence upon the company's buying and selling policies.

The controller said that the management of Consolidated Leather Company still had an "open mind" on the proposition of adopting the LIFO method of inventory valuation for tax purposes, and that, as the 1951 and future fiscal year-ends approached, the question would no doubt again be given careful consideration and thorough discussion.

#### EXHIBIT 1

Notes Regarding LIFO Inventory and the Effects of LIFO on the Results for the Year Ended June 30, 1951

The balance sheet as of June 30, 1951, and the profit for the fiscal year have been stated on the LIFO (last-in, first-out) method of inventory for all our raw materials and for the raw material content of our finished leather. Without attempting to go into the technical details of the LIFO principle, it may be well to explain that this method permits an inventory value at the average cost of the materials in the inventory at the beginning of the first year when the LIFO method is used. In our case this means that the inventory as of June 30, 1951, is valued at average costs on June 30, 1950, for our raw materials and the raw material content of our finished leather. Moreover, for inventory quantities equal to the quantities on hand July 1, 1950, we shall be permitted to use the same value for our inventories at the close of each fiscal year in the future, regardless of either the cost or market value.

The effect of LIFO for the fiscal year is as follows:

#### A. INVENTORY RESERVES

1. It will no longer be necessary to use Inventory Reserve adjustments in order to state our profits on replacement.

2. The amount of \$175,000 added to the Inventory Reserve on December 31, 1950, as shown on our semiannual statement, is now eliminated.

3. The Inventory Allowance of \$650,000 as of June 30, 1950, will remain on our books as a reserve in the event that raw skin prices should at some future date drop below the present LIFO costs.

### B. RAW MATERIALS

The LIFO inventory of raw skins and hides is valued at about \$400,000 below the market on June 30, 1951.

#### C. FINISHED LEATHER

Since our leather inventories consist of numerous colors, finishes, and grades, these inventories have been valued in the past below cost in order to allow for losses which might result from changes in demand and style factors. Under the LIFO inventory method, the value of our leathers is approximately \$338,000 greater than under our old method. It must be remembered, however, that under the LIFO principle the inventory is still conservatively valued.

#### D. EFFECT ON PROFITS

If our inventories had been valued under the same principle as in prior years, but without any adjustment of the Inventory Reserve, the profit after taxes would have been \$895,324 as against \$901,160 on the LIFO base. The more favorable results under LIFO for the current year arise because, under LIFO, part of the profits for this fiscal year are taxable at the lower rates prevailing in the prior year.

#### Note A to the Financial Statement:

In the pricing of the inventories of raw skins and hides and the raw skins and hides content of in-process and finished leather (\$4,396,594.89), the company has adopted the last-in, first-out method of determining cost instead of the method previously used. Such change had the effect of reducing the amounts stated for inventories at June 30, 1951, by \$71,000; however, the net profit for the year was increased by approximately \$6,000 because of adjustments to a LIFO basis in the opening inventories which are taxable at the lower rates in effect for the previous fiscal year. Other inventories (\$1,359,167.99) were priced at the lower of first-in, first-out of cost or market, less allowance for possible losses due to style changes. The allowance of \$650,000 provided in prior years to reduce the inventories of raw skins and hides to an approximately last-in, first-out basis had been retained in the event prices decline below the LIFO base.

**EXHIBIT 2**Summary of Operations

	Year Ended J	une 30, 1951	Six M Ended Decen	onths aber 31, 1951	
	Originally Reported on LIFO Method	Restated on Method Used Prior to June 30, 1951	Originally Reported on LIFO Method	Restated on Method Used Prior to June 30, 1951	
Total gross income	\$20,091,525	\$20,091,525	\$8,132,875	\$8,132,785	
Cost of products sold Other expenses	16,665,294 1,835,071	16,259,865 1,835,071	7,087,672 778,270	7,889,182 778,270	
Total costs and expenses	18,500,365	18,094,936	7,865,942	8,667,452	
Profit before reserve and taxes	1,591,160	1,996,589	266,843	534,667*	
Reserve for inventory— increased	_	225,000	_	_	
Reserve for inventory— decreased	_	_	_	525,000	
Profit after reserve, before taxes	1,591,160	1,771,589	266,843	9,667*	
Provision for federal taxes	690,000	900,000	135,000		
Federal tax refundable	- (			250,000	
Net profit after reserve and taxes	\$ 901,160	\$ 871,589	\$ 131,843	\$ 240,333	

<sup>\*</sup> Loss

# Status of Inventory Reserve

(Allowance for Possible Price Declines of Raw Skins and Hides)

June 30 1951

june 50, 1951	
Balance per Balance Sheet as originally reported	\$650,000
Reserve increased, as above	225,000
Adjusted balance	875,000
December 31, 1951	
Reserve decreased, as above	
Adjusted balance	\$350,000

ENHIBIT 3

Wholesale Price Data on Glazed Kid Leather-1939-1951 \*

	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951
January	.560	.620	.590	.60	.60	09.	09.	09.	916.	086.	.931	.931	1.007
February	.560	.613	.590	.60	09.	09.	.60	09.	.902	.975	.931	.931	1.019
March	.560	.605	.590	09.	.60	09.	09.	09.	.902	.962	.931	.931	1.019
April	.560	.605	.590	09.	.60	09.	09.	09.	.902	.931	.931	N.A.	1.019
May	.560	.605	.590	09.	09.	09.	09.	09.	.902	.931	.931	.931	1.019
June	.560	.605	.590	.60	.60	09.	.60	.758	.902	.931	.931	.931	1.019
July	.560	909.	.590	09.	09.	09.	09.	.810	306.	.931	.931	.931	1.002
August	.560	.590	.593	09.	09.	09.	09.	066.	.914	.931	.931	.931	.956
September	.610	.590	009.	09.	.60	09.	09.	1.050	.974	.931	.931	.946	.951
October	.620	.590	009.	.60	09.	09.	09.	1.050	086.	.931	.931	096.	.951
November	.620	.590	009.	.60	09.	09.	09.	1.200	1.009	.931	.931	096.	.951
December	.620	.590	.600	.60	.60	.60	.60	1.260	1.009	.931	.931	.975	.951

\* Top grade through 1946—No. 2 medium weight, 1947-1951. Prices per square foot. source: U. S. Bureau of Labor Statistics, Wholesale Prices (Washington, Government Printing Office).

ENHIBIT 4

Goat and Kidskin Prices—Amritzars (cents per skin)

Average	42.3	42.6	36.5	40.7	42.9	41.9	44.6	45.0	74.2	96.4	92.6	100.1	99.4	104.7
December	42.1	45.8	35.1	43.1	40.8	43.1	45.0	45.0	110.4	107.9	98.7	97.4	112.5	83.3
November	44.0	45.0	37.6	42.5	40.7	42.6	45.0	45.0	118.7	107.8	95.3	93.3	105.4	90.6
October	42.8	46.6	33.2	42.5	40.1	42.3	45.0	45.0	108.2	100.0	92.7	96.4	99.3	91.7
September	42.1	44.2	30.0	42.5	41.1	42.5	45.0	45.0	91.5	93.8	9.68	102.8	8.66	89.6
August	44.8	38.2	30.6	43.8	44.2	42.4	45.0	45.0	96.7	90.7	85.9	102.3	97.5	90.5
July	43.5	38.8	29.7	42.9	44.2	42.5	45.0	45.0	80.0	81.5	85.9	103.2	91.7	104.7
June	39.9	39.2	32.8	42.9	44.1	42.3	45.0	45.0	53.3	76.4	88.1	98.3	91.7	110.4
Мау	41.7	41.1	36.6	41.5	43.9	42.1	45.0	45.0	51.6	80.2	6.76	99.5	94.0	112.1
April	40.7	43.0	39.3	39.5	44.0	42.5	45.0	45.0	45.0	85.0	91.5	99.5	7.76	114.6
March	41.3	42.3	41.3	35.8	44.0	39.9	43.3	45.0	45.0	67.6	91.0	102.1	101.5	121.9
February	40.0	43.2	45.3	35.6	44.2	39.8	43.3	45.0	45.0	111.7	84.8	103.7	102.9	124.5
January	44.5	44.1	46.4	35.2	43.8	40.6	43.3	45.0	45.0	124.2	110.0	102.1	99.0	122.1
Year	1938	1939	1940	1941	1942	1943	1944	1945	1946	1947	1948	1949	1950	1951

NOTE: The highest price recorded by the company since 1906 was \$3.05 in November of 1919. By November of 1920 the price had fallen to 75 cents and by April of 1921 to 46 cents. The lowest prices on record since 1906 were reached in 1932; the range for that year was from 18.9 cents to 29.8 cents.

SOURCE: Company record.

# case 17

# BALFORD AUTOMOTIVE PARTS, INCORPORATED

Procedures for the Control of Fixed Asset Additions

In this case, the ever-present problem of applying accounting principles and manuals to specific problems is presented. The issue is one of determining what expenses are to be capitalized under the provisions of a company's accounting manual.

The Balford Automotive Parts Company was a large producer of automobile castings and small metal parts for the automobile industry. The company was reasonably large with annual sales of \$50,000,000, and it employed about 3,400 productive personnel. Balford maintained its home offices in Detroit. Branch offices were located in Saginaw, Flint, and Pontiac, Michigan. The company also owned a number of subsidiary companies located in Linden, New Jersey; Somerville, Massachusetts; Sacramento, California; and St. Paul, Minnesota. Branches and subsidiaries were given about the same status, both commonly referred to as "divisions."

Each division of the company was headed by a vice-president who reported directly to Balford's president in Detroit. The division head's staff included a sales manager, a production manager, and a controller, all of whom, while directly responsible to the division head, also had a functional relationship with their counterparts on the president's management staff in Detroit. The company's management believed that this relationship was valuable for communicating information and suggestions among its various divisions. In fact, major policies set by top management were transmitted through the staff organization as well as through the operating line to division heads.

Although the controller at division level was responsible to the division head, there were certain procedures and standards established by the Central Controller's office with which he was expected to comply. An example of such procedures was one designed to retain in the central offices in Detroit a high degree of control over the expenditure of funds for fixed assets.

There were a number of reasons why Balford insisted on retaining in its central offices close control over the company's fixed assets. One reason was that the firm's fixed assets, which amounted to about \$18,000,000, represented a large portion of its total investment. Secondly, the company's success depended to a very great extent upon its remaining well abreast of technological progress in the automotive industry; the company's executives believed that its reequipment policy was an integral part of the management and control of fixed assets. Thirdly, the concentration of control over fixed assets in the central office made it possible for Balford to develop a group of experts each of whom had a highly specialized knowledge of a particular type of equipment used by the company. Also, the management believed that the internal audit of its fixed assets would be greatly facilitated by the concentration of control at the central office level. Finally, it was generally believed that the central control provided greater assurance that the company maintained adequate insurance coverage for its fixed assets.

# **Depreciation Policy**

In accordance with the policy of centralization of the control of fixed assets, matters concerning fixed asset depreciation came within the purview of the company's home office in Detroit. Although the division responsible for the purchase of a new asset might suggest a depreciation rate, the final determination of depreciation rates was established by the central office, and each year the central office re-examined established rates to determine whether they were still adequate, taking into account any developments which may have served to alter the bases upon which the rates were originally established. The factors listed by the company as being relevant to the question of depreciation rates were:

- A. Allowable tax rates
- B. Estimated life, determined by:
  - 1. the manufacturer
  - 2. the plant engineering staff
  - 3. the central office manufacturing staff
  - 4. outside consultants
- C. Use of the asset

- D. Price of the asset
- E. Fragility of the asset
- F. Accountability of the asset
- G. Obsolescence factors (technological)
- H. Experience of other manufacturers

# Acquisitions

Although requests for fixed asset acquisitions typically originated at division level, and the details to support the request developed there, the final disposition of such requests was in the hands of the home office. Upon completion of an acquisition, the division office recommended to the home office a distribution of the costs and expenses incurred in connection with the purchase and, as stated earlier, suggested a depreciation rate. Such matters were of considerable interest to the division head because of their effects upon the division profit and loss statement which provided the primary basis for judging the performance of division managers. In order to achieve as much consistency as possible among different divisions and different projects, with respect to the disposition of expenditures and the establishment of depreciation rates, the central office also maintained close supervision over these matters.

Exhibit 5 presents some excerpts from Balford's procedures manual on fixed assets.

The project described below is a typical example of the kinds of projects for which capital expenditures were made.

In August, 1956, the executives of Balford decided to restore the structural integrity of three Detroit buildings: a utility building, its annex, and "A" storehouse, and to preserve and improve the appearance of these structures by the application of waterproofing materials, cleaning and repairing the concrete, establishing a newer and better drainage unit, and painting the steelwork. The project was completed in November, 1956, at a cost of \$36,476.50. Exhibit 1 gives the detailed breakdown of these costs.

This project, similar to many other such projects, was the first of its specific type—restoration of concrete buildings—since the war. In order to acquaint the executives fully with what was being done, Balford prepared the following memorandum.

#### EXECUTIVE MEMORANDUM

## Purpose

Utility Building—The reinforced concrete pilasters and spandrel beams of this structure are in very poor condition; concrete has deteriorated and spalled off to such an extent that the main steel is exposed. The individual brick and terra-cotta sections are structurally sound, but the mortar joints have deteriorated, have eroded considerably, and are not watertight. The accelerated deterioration of this structure must be checked at once; otherwise, major reconstruction of the exposed north and west elevations will be necessary. Photographs showing the condition of this structure are appended.

Utility Building Annex—This brick and concrete structure is in good condition structurally. Deterioration is commencing, and restoration and water-proofing are necessary to arrest the decay of the structure before the deterioration becomes accelerated. The poor appearance of this structure in contrast to a clean utility building would be so "marked" that it would be highly desirable to clean, restore, and waterproof this structure along with the Utility Building proper. Establish drainage system.

"A" Storehouse—The reinforced concrete exposed to the weather has begun to deteriorate at an accelerated rate. Water has entered the concrete, corroding the steel, and the rust has caused the concrete to spall off. Many small cracks are appearing, and it is necessary that the concrete be repaired and waterproofed to retard this deterioration.

The metal sash and doors and steel water tanks and supports are beginning to show rust spots. Complete cleaning and repainting are necessary.

## Description

Concrete—Cut out loose, deteriorated concrete to good, sound live material, clean reinforcing steel, add reinforcing steel where necessary, and repair concrete by patching or uniting in an acceptable manner, with nonshrink concrete. Clean all surfaces thoroughly by wirebrushing or sandblasting, and waterproof to exclude entrance of water. Concrete windows and door sills are to be repaired in a like manner.

Brick and Terra Cotta—Clean the exposed areas thoroughly by wirebrushing, sandblasting, or any other method required to remove all foreign materials; rake out deteriorated mortar joints and repoint; replace broken brick or stone, and waterproof to exclude entrance of moisture. The back of parapet walls are to be treated in a like manner.

Doors, Windows, and Metal Work—Clean thoroughly to remove all rust, and paint with one coat of rust inhibitor paint and one top coat of metal paint. Caulk around all openings with best grade of caulking compound.

Steel Water Tanks-Clean and paint as specified for metal work.

Roofs-Roof cleaning or repair is not a part of this project.

Drainage-Establish new drainage system on utility building annex.

### **Justification**

The Utility Building, constructed in 1923, has a net book value of \$215,000, and a book depreciation of \$93,000. According to the records, the brick and concrete were repaired in 1942 and in 1944 at a cost of about \$7,000, and in 1942 window-sash replacements were made, costing \$2,600.

The Annex, constructed in 1944, has a net book value of \$24,000, and a book depreciation of \$11,000. According to records, there has been no expense for repair work on this structure.

The "A" storehouse, constructed in 1926, has a net book value of \$68,000 and a book depreciation of \$36,000. The only repair expenditure was in 1955, when \$2,300 was expended in an emergency to repair a structural failure in a bin wall.

The repair and waterproofing of these structures will prevent extensive and costly future repairs.

Photographs of some of the damage are shown in Exhibits 2, 3, and 4.

The cost of the project was based upon a firm price quoted by Company A to Balford, and accepted by the company. Four firms bid for the waterproofing job, and their cost breakdowns were:

	Company A	Company B	Company C	Company D
Utility Building and Annex	\$28,834	\$22,465	\$20,340	\$30,004
"A" Storehouse	3,652	1,320	3,800	3,967
Subtotal	\$32,488	\$23,765	\$24,140	\$33,971
Est. amount to complete	3,988	800	4,000	_
Total	\$36,476	\$24,565	\$28,140	\$33,971
Basis of bid	Firm price	Firm price	(Est. – cost plus)	(Est. – cost plus)

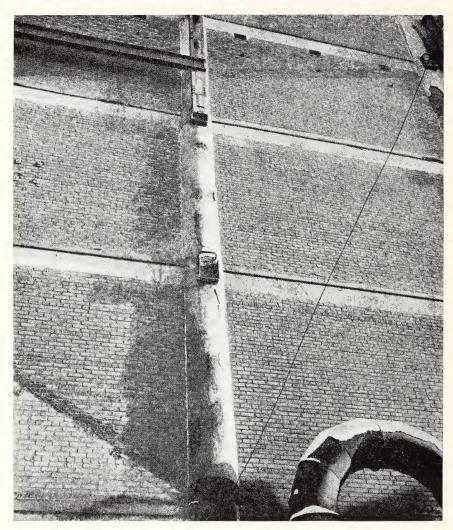
What would be the effect of this restoration on the balance sheet and income accounts of the company?

#### EXHIBIT I

# Cost of Project

## Restoring Utility Building, Annex and "A" Warehouse Detroit, Michigan

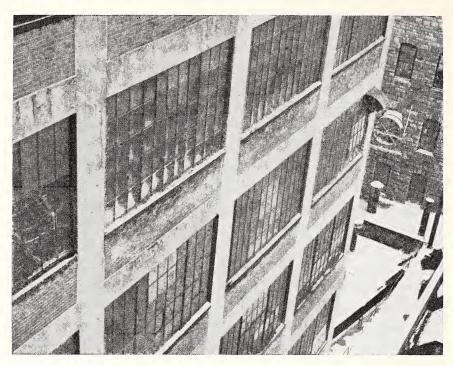
Waterproofing concrete	\$19,423.50
Cleaning and repairing concrete	8,906.00
Establishing positive drainage at water table	4,351.00
Painting all steel work	3,796.00
Total cost	\$36,476.50



West wall of Utility Building, showing the condition of pilasters, spandrel beams, and brickwork. Note the spiral reinforcing steel in columns.



Southwest exposure of water tanks and penthouses on Utility Building. Steel supports, tanks, and metal work require repainting, and brickwork and penthouse walls require repair and waterproofing.



North wall of Utility Building, showing efflorescence of brickwork under window sills caused by leaking sills, permitting water to go into the wall. The concrete shows patches made in 1941-1944.

## EXHIBIT 5

Definitions of Terms Used in Accounting Guides for Equipment and Buildings

### 1. Additions

Classified as additions are equipment or structures representing new and

separate units or extensions of existing units.

Related to additions are *improvements* or *betterments*. These are alterations or structural changes in a building or unit of equipment which result in a better piece of property in the sense of greater durability or increased productivity or efficiency.

Within the levels set forth by types of machinery and equipment on the pages which follow, these expenditures are added to the Buildings and

Equipment Account of the company.

## a. Purchase of Used Equipment or Buildings

All costs involved in the rehabilitation of the newly-purchased used equipment or buildings for productive use should be capitalized. Such used equipment or buildings should be appraised and the percentage of condition determined. The cost value divided by this percentage of condition determines the gross value which is set up on the records (in the General Office) with the excess over cost credited to the Allowance for Depreciation.

### b. Excessive Installation Costs

Excess installation cost due to unusual conditions or emergency requirements is not capitalized but is charged to expense. In other words, property should not be carried on the book records at a gross value in excess of its normal reproduction cost at the time of installation.

### c. Painting

The cost of repainting buildings or equipment is charged to expense. The cost of the first paint job of new equipment and buildings or newly-purchased buildings and secondhand equipment is capitalized, if this work is performed at the time of purchase.

## 2. Replacements (including retirement)

The retirement of units (or parts of units) and the addition of like or similar new units represent replacements. A physical replacement of a unit does not necessarily result in an accounting for the transaction as a replacement. The unit must be sold, scrapped, or disposition otherwise made in order to receive this type of accounting treatment. Equipment which has been replaced, but retained on an inactive status, is not withdrawn from the capital accounts and consequently the cost of the new equipment is added in entirety to the gross book value of equipment.

Two distinct accounting transactions are involved with replacements, as follows: the elimination (or retirement) of the old unit and the acquisition of the new unit. The elimination of the old unit results in a credit to the Buildings and Equipment account and a charge to the Allowance for Depreciation for the book value of the unit retired. The value represented by the acquisition of the new unit is an addition to the Buildings and Equipment account.

Exceptions to the foregoing apply in the case of replacements of parts of units when the cost falls below \$500. In these transactions, the cost of the replacement is charged to current operations.

## 3. Expense

The cost of incidental repairs which neither materially add to the value of the property nor appreciably prolong its life but keep it in an ordinarily efficient operating condition is considered as maintenance expense.

Within the limitations set forth by types of equipment, certain replacements of parts of equipment units are treated as maintenance expense.

Costs of rearrangement of building areas are classified as maintenance expense since such changes generally do not add to the value of the property.

## **Examples of Additions Representing Permanent Installations**

Additions of platforms, permanent walls for partitions, sound-proofing, garages, sheds, air conditioning, and heating equipment.

## Replacements and/or Retirements

Demolition or removal of building units originally costing more than \$200. (Examples: demolishing platforms, permanent walls, sidewalks, concrete pavements, as well as demolition of entire buildings.)

Expenditures over \$500 for replacement, reconstruction, or repairs (not in the nature of deferred maintenance). Expenditures subject to this treat-

ment are, as follows:

(1) Expenditures covering the entire replacement or reconstructions of major portions of the building, such as roofs, floors, large bins, plumbing, and lighting.

(2) Expenditures occasioned by defective material or poor workmanship

in the original construction.

(3) Expenditures increasing the life of the building beyond the original estimate on which the depreciation is based.

## Expense

Additions of items of less than \$200 not reported as a part of a plant

project.

Ádditions of building units which are of a temporary nature and which do not increase intrinsic plant values. (Examples: temporary partitions, false ceilings.)

Replacements representing expenditures of less than \$500 on one build-

ing.

Ordinary building maintenance such as painting or other work which must be done as often as once in five years.

<sup>\*</sup> A permanent wall is one which is an integral part of the building structure. A temporary partition is one which in case of removal would not affect the basic building structure.

# case 18

# TERRINI CONSTRUCTION COMPANY

# Purposes of Depreciation

This case provides a springboard for a discussion of some of the factors which might influence a management in its choice of methods and rates of depreciation.

In December, 1956, the executive committee of the Terrini Construction Company met to discuss, among other year-end matters, the company's depreciation policy on its mechanized equipment. The chief engineer had pointed out at the previous meeting that the depreciation charges amounted to over thirty per cent of his bid price on a construction job and he wanted to be sure they were right.

The chief accountant started the discussion by stating that the Company's present method of computing the charge was to divide the cost of the equipment by its estimated life and to charge this amount yearly to income. For bidding purposes the same figure was used, converted to a daily rate.

The accountant went on to state that he did not believe this charge was quite accurate. He pointed out that the company was earning around ten per cent on its assets and that since the money represented by the depreciation charge was reinvested in the company it earned additional income until the time came to buy a replacement piece of equipment. He said he had compiled some figures to illustrate this (Exhibit 1). The figures showed that the depreciation on a machine with a five-year life costing \$10,000 would amount to about \$12,200 at the end of the fifth year. The accountant believed the \$2,200 (\$12,200 — \$10,000) to be excessive depreciation. He suggested that a charge of \$1,640 per year would be sufficient to replace the asset (Exhibit 2). The chief engineer then asked, with evident satisfaction, whether he could use the lower figure for bidding purposes, for this, he said, would enable him to insure sufficient business to keep the machines and men busy.

"But," interjected the president's son, who had graduated the

			E	CHIBIT 1	1				
Cost	of	Equipment:	\$10,000;	Estimated	Life	of	Equipment:	5	Years

Year	Depreciation Charge	Factor *	Depreciation Compounded to End of 5th Year
1 2	2,000 2,000	1.46 1.33	2,920 2,660
3	2,000	1.21	2,420
4	2,000	1.10	2,200
5	2,000	1.00	2,000
			12,200

<sup>\*</sup> The factor compounds the depreciation charge of \$2,000 at the end of the first year to what it would equal at the end of the fifth year if it earned 10% interest compounded annually.

EXHIBIT 2

Cost of Equipment: \$10,000; Estimated Life of Equipment: 5 Years

Year	Depreciation Charge	Factor	Depreciation Compounded to End of 5th Year
1	1,640	1.46	2,394
2	1,640	1.33	2,181
3	1,640	1.21	1,984
4	1,640	1.10	1,804
5	1.640	1.00	1,640
	,-		10,003

previous June from a business school, "where does this leave the U. S. Steel argument that their depreciation charges are inadequate to compensate for rising prices?"

At this point the company treasurer entered the discussion by stating that it was "probably a good thing if depreciation charges were slightly excessive. A \$10,000 piece of equipment," he went on to say, "bought five years ago certainly costs at least \$12,200 today."

The discussion continued for about ten minutes, the participants becoming more and more excited and apparently confused. Finally the president halted the talk and said that he thought nothing could be settled at that meeting. He suggested that the treasurer and the accountant give some thought to the issues raised by the discussion and determine whether any changes in the present depreciation

policy were needed. He then ended the meeting by remarking that the present method of computing depreciation charges had one strong advantage, and that was that it was simple to compute, easy to understand, and did not depend on changes either in prices or in company earnings.

## SHIPSTEAD ELECTRONICS CORPORATION

Depreciation of Fixed Assets

This case presents the problem of what top management should do about an apparent material over-depreciation of assets. Its problem includes the issue of disclosure to stockholders, the union, and the public.

The Shipstead Electronics Corporation was a large producer of radios, phonographs, and television sets. The company also produced related electronic equipment in specialized fields for the government and private industry. Shipstead had plants throughout the world, and sales branches throughout the country. Although much of the production at Shipstead's plants was standardized, there were great technological advances which occurred too frequently to allow Shipstead to manufacture a product of standard parts for more than five years. Of course, many of the components of the radio and television sets were standard equipment on all models, and this type of production somewhat simplified the replacement problem.

Fixed assets at Shipstead were grouped by classes of assets. Depreciation rates were computed at specific rates by classes of asset on the gross value of all such assets in use by the company. For example, the company depreciated plants of frame and light steel construction at a three per cent rate on the basis of an estimated life of 33½ years. If the asset remained in use beyond the estimated life, however, the company continued to depreciate the asset as long as there was any remaining undepreciated balance on this class of asset. If the frame and light steel plant had been built in 1910 at a cost of \$200,000, it would be fully depreciated by 1944. The company, however, would continue its yearly charge of \$6,000 per year to operations as long as there was an undepreciated balance on all plant buildings of frame and light steel, despite the fact that for tax purposes depreciation stopped after \$200,000 had been recovered. This policy served to build up a so-called secret reserve which offset possible obsolescence of undepreciated assets.

#### EXHIBIT I

# Summarized Balance Sheet—August 31, 1950

#### ASSETS

Current	
Cash	\$ 18,460,000
U.S. Securities	4,370,000
Accounts Receivable	34,540,000
Inventories	53,722,000
Prepaid Expenses	2,707,000
Total Current	\$113,799,000
Land, Buildings and Equipment	\$103,844,000
Less accumulated depreciation	41,972,000
1	\$ 61,872,000
Total	\$175,671,000
LIABILITIES	
Current	
Accounts Payable	\$ 24,067,000
Accrued Taxes	11,442,000
Other	3,074,000
Total Current	\$ 38,583,000
Debentures-20 yr. Sinking Fund	\$ 16,400,000
Capital Stock and Surplus	, , ,
Preferred Stock	31,000,000
Common Stock	61,444,000
Earned Surplus	20 244 000
	28,244,000

The effects of such a depreciation policy did not become pronounced so long as the company expanded. Shipstead had shown steady growth since its inception in 1902. Asset balances had continued to grow each year despite depreciation charges. However, as the plants and equipment grew older and remained in use, and the rate of company expansion dropped off or ceased, the imbalance between assets and reserves for depreciation became accentuated. At August 31, 1950, the amount of such fully depreciated property still on the books and still being depreciated amounted to approximately \$16,000,000 out of a gross value of depreciable assets of \$100,000,000. The depreciation reserve was \$42,000,000, and total assets at Shipstead were \$175,000,000. Sales for the 1949-1950 fiscal year amounted to \$700,000,000, and profits after taxes were \$20,000,000. Supplementary data on the financial position of the company and on its fixed assets are presented in Exhibits 1, 2, and 3.

#### Supplementary Data

## Fixed Assets and Reserves for Depreciation August 31, 1950

	Assets	Reserve for Depreciation
Land	\$ 4,164,000	
Stone	22,404,000	\$19,807,000
Brick	17,662,000	8,607,000
Other	3,174,000	824,000
Machinery and Equipment	56,440,000	12,734,000
	\$103,844,000	\$41,972,000

NOTE: Depreciation charged operations for year ended August 31, 1950, totaled \$3.864,000.

Fully Depreciated Property, Based on Year of Acquisition

	Assets	Depreciation
Buildings Stone Brick Machinery	\$ 13,200,000 600,000	\$16,047,000 702,000
Lathes, Punch Presses Knobbing and Curling Machines	2,564,000 \$ 16,364,000	3,176,000 \$19,925,000

The setting of the depreciation rate at Shipstead was done by the chief accounting executive, the controller of the corporation. This rate was supposed to represent fairly the physical life of the plant, machinery, or equipment involved. Actually, however, the machinery either lasted a longer or shorter time than expected, because of technological factors. The physical life of plants could be extended almost indefinitely through preventive maintenance. In setting the life and rate of depreciation of an asset, the controller considered many factors:

- 1. The tax rates allowable.
- 2. Estimates of life made by manufacturers or contractors, engineers, or outside experts.

3. Miscellaneous factors, such as the use to which the plant or machine would be put, the price or cost of the article, fragility, or other manufacturers' experiences.

Depreciation rates were changed if the controller believed that an error had been made in the original estimate, but only if the estimate affected the whole class of assets and not merely one asset.

Naturally the depreciation method followed by Shipstead, since it was not allowed for tax purposes, compelled the company to maintain two sets of records for fixed assets: one for taxes, and one for company use and annual report presentation.

#### **EXHIBIT 3**

## Supplementary Data

A sample survey of estimated remaining lives of fully depreciated assets now in use was made by the engineering office and, on sample, assets showed the following range:

Estimated Remaining Life

Stone Building-(No. 44) . . . . From 1 to 10 years

Based upon technological improvements, physical condition, and company policy pertaining to centralization of manufacturing facilities. It was estimated that the only resale value of building No. 44 was a nominal salvage value.

Machinery—(Plant No. 24)

Turret Lathes From 1 to 3 years

Based upon present technological improvement, the present machines are obsolete. Within the next several years, savings from new equipment should justify the purchase of new equipment.

Recently the company estimated that it was creating a hidden reserve of about \$600,000 per year. The problem of what depreciation policy to follow in the future assumed major proportions at Shipstead. The company did not expect its business to expand substantially (nor even at the same rate as previously) in the next ten years. It believed that it would remain at approximately the same size, and that, over a period of years, the hidden depreciation reserve would thereby become extremely large in relation to other asset and liability accounts.

The company gave three reasons for maintaining its present policy. First, Shipstead believed that it should recover, through an adequate selling price, the cost of its operations. The corporation felt that it

should protect the investment of the stockholders, both dollarwise and in relation to purchasing-power. It therefore reasoned that the product should bear the actual costs of operations, and not reflect paper profits which accrue because of low depreciation rates due to undervalued assets. Even though selling price was largely determined by competition, the company believed that price was still influenced by what the manufacturer believed his price must be to cover his total costs and make a profit. Shipstead was afraid that if it did not depreciate on the gross asset balance of a group of assets, it would not recover the amount it should, and could, recover.

The second reason given by the company for keeping the present depreciation policy was that, although this rate created a reserve when assets outlived their depreciable life, Shipstead lost from the reserve when assets were retired before they were fully depreciated. The reason for this was that Shipstead never charged income with the undepreciated balance (gross value less salvage less depreciated amount gives undepreciated balance). Instead, the total gross value less salvage was deducted from the depreciation reserve. Since the depreciation rate was based upon average estimated life, the apparent hidden gains and losses should have negated each other. Shipstead further argued that even though a reserve was being built up at the rate of \$600,000 annually, it was impossible to determine obsolescence accurately in an industry as competitive and technologically advanced as radio, and that any year might bring an unexpected change which would cause Shipstead to scrap old machinery and buy new equipment.

Finally the third reason why Shipstead was hesitant about shifting depreciation programs was the tremendous effect such a change would have initially on the balance sheet. The reserve would then become a "profit" in the eyes of the public, labor, and the stockholder, and pressures would be exerted upon Shipstead management by each group. Management at Shipstead was afraid that these pressures might seriously hamper the efficient operation of the company.

The controller of Shipstead has asked you to say what you think should be done with regard to depreciation of fixed assets. Your review should present specific proposals both for record keeping purposes and for treatment in the annual report.

## **BIGHORN DRILLING COMPANY**

# Depreciation Policy

This case involves further consideration of some of the issues raised by the Terrini Construction Company case in connection with the question of depreciation. It broadens the area of discussion by raising the implication of depreciation methods to operating decisions of management.

### Introduction

In December, 1956, the newly-appointed controller of the Bighorn Drilling Company began to examine the company's depreciation policy for drilling rigs and drill pipe. Basically, he set out to determine whether the company's existing depreciation practice provided adequate information for use in costing bids on new work and in determining the company's profit on its drilling operations.

The question of an equitable rate for bidding purposes had been raised frequently by the operating departments in recent months because industry bidding practices had become increasingly competitive and because the company had been operating at only sixty per cent of capacity in recent months. In determining the profitability of drilling operations, the controller wondered whether one rate or a series of different rates was best suited to the several purposes of evaluating management performance, reporting progress to stockholders, and reporting profits for federal and state tax purposes.

# Contract Drilling Operations

Depreciation was a highly significant cost element in the contract drilling business. To illustrate the relative importance of the depreciation charge to Bighorn, it might be noted that depreciation charges normally amounted to approximately three to four per cent of manufacturing costs of General Motors Corporation. In the Bighorn Drilling Company, depreciation charges amounted to approximately twenty per cent of direct drilling costs in 1956.

When an oil "operator" wanted a well drilled, he drew up specifications on the well and sent out bid requests to a selected group of drilling contractors such as Bighorn. The drilling contractors would then submit sealed bids stating a per-foot price, such as \$10.50 per foot for a 13,000 foot well. In addition to the footage bid, each contractor submitted a daywork bid, which might amount to about \$900 for a 24-hour day. The operator paid the contractor at the daywork rate whenever delays arose which were beyond the control of the contractor. An example would be delays in drilling while the substructure formations were being tested for oil. In preparing footage bids, the key variable was the expected number of drilling days that would be required to drill a well.

In estimating drilling time, the contractor used geologic information and drilling records on old wells compiled by the operators and service companies, as well as his own records. The contractor multiplied the estimated drilling days by his daily operating costs and divided by the number of feet to get an approximate cost per foot for bidding purposes. The number of contractors bidding on a well varied, depending on the availability of rigs in the region and on the number of drillers the operator wished to solicit. Seldom did a contract driller know definitely who else was bidding or, if he lost, what the accepted price was. The industry typically kept cost and price information closely guarded.

Although Bighorn Drilling Company operated fourteen rigs, the industry was characterized by a large number of small companies, many of which had only one rig. Investment in one rig, however, ran from one-quarter to one-half million dollars and each rig required an additional investment of around \$100,000 in drill pipe. Most of the small companies were privately owned, with the proprietor making the bids on new business. In such companies, cost records were scarce and often poorly kept. Maintenance practices on equipment were carefully carried out by some companies, among them Bighorn, but many companies had no maintenance programs and simply worked their rigs to exhaustion.

Drilling equipment was generally separated into two classifications: drilling rigs and drill pipe. Drilling rigs were classed by their maximum depth capabilities and consisted of an assembly of components. The most important components were the derrick or mast, the engines, pumps, compounds, and the draw-works; this latter was

a gear and pulley system enabling the engines to turn or lift the drill pipe. Besides these major components, a host of lesser pieces of

equipment were required for the operation of a rig.

The rig's operation was handled by a foreman, known as a toolpusher, and fifteen or more men, working on three 5-man tours or shifts. The toolpusher was in charge of the rig's operation, ordered and signed for supplies, and supervised the maintenance and repair of equipment. The preparation of cost records and the purchase of new equipment was handled by the home office.

# Controller's Investigation

Prior to December, 1956, Bighorn's drilling department kept records on the cost of drilling operations, which it used to help make up bids and to evaluate the performance of the rigs and of the department as a whole. Another set of cost records was kept by the accounting department primarily for reporting to stockholders, to state and federal government tax agencies, to top management, and to the board of directors.

The two sets of records differed in several ways, one of the most important of which was in the treatment of depreciation. The drilling department depreciated drilling rigs separately and at a different rate from drill pipe; the accounting department depreciated both rigs and pipe together at a fifteen per cent annual rate. In December, 1956, the controller was asked to clarify the situation; top management, the drilling department, and the board of directors were all interested in evaluating the performance of the drilling operations and wished to know which set of records, if either, was more useful for this puropse.

The controller began his analysis of the drilling department's operating results by studying the bases for the various depreciation charges which had been made. With this information as a background he planned to gather what facts he could relating to the actual lives and prices of the equipment in order to test the accuracy of the rates being used. With the results of this analysis he could provide a more accurate picture of the drilling department's operating performance.

Balance sheets and income statements for the company are shown in Exhibits 1 and 2. These were prepared by the accounting department for reporting to the government and to stockholders.

**EXHIBIT 1**Year-end Balance Sheets—in Thousands

Assets	Sept. 30, 1955	Sept. 30, 1956
Cash	\$ 87 1,027 617 746 \$2,477	\$ 464 727 462 965 \$2,618
Land and buildings Drilling rigs and pipe Vehicles and office equipment Gas lines Total fixed assets Less reserve for depreciation Total net fixed assets Deferred charges Total Assets	\$ 312 4,121 388 29 \$4,850 2,940 1,910 241 \$4,628	\$ 316 4,674 * 433 29 \$5,452 3,327 2,125 295 \$5,038
Liabilities	Ψ1,020	40,000
Accounts and notes payable Accrued taxes Total current liabilities Deferred Liabilities Long-term note Common stock	\$ 597 52 \$ 649 47 1,299	\$ 640 92 \$ 732 78 1,560
Capital surplus Earned surplus Total equity Total Liabilities	482 2,118 2,633 \$4,628	482 2,153 2,668 \$5,038

<sup>\*</sup> Approximately \$1.13 million of this is drill pipe.

# **Depreciation Rates Used by the Drilling Department**

In making up its contract footage bid on a well the drilling department estimated the number of days the work would take and then based labor and material cost requirements on this estimate. To this total was added the overhead and depreciation charges each of which was a predetermined daily rate multiplied by the estimated number of drilling days to be spent on the well. For example, the drilling department estimated that a particular 12,000-foot well would take 105 days, that \$55,400 would be spent on labor supplies and maintenance, and that \$45,600 would be spent on bits, and on

Income Statements—Years Ending September 30—in Thousands (Excerpts from accounting department figures)

	1947	1948	1949	1950	1951
Total revenue Total expenses Depreciation Net profit before taxes	\$2,566 2,165 374 28	\$2,641 1,945 342 354	\$2,785 2,174 439 171	\$3,195 2,628 441 127	\$3,500 2,725 489 286
Rig activity—% of maximum					79.9
	1952	1953	1954	1955	1956
Total revenue	\$4,458 3,352 589 517	\$3,877 2,888 666 324	\$3,932 3,294 733 (95)	\$3,826 3,225 691 (90)	\$4,765 3,982 741 43
Rig activity—% of maximum	79.9	76.7	64.5	76.1	82.3

# Income Statements for Years Ended September 30, 1955 and 1956 in Thousands (Accounting department figures)

	1955	1956
Drilling tool revenue	\$3,752,934	\$4,748,511
Miscellaneous income	73,281	16,474
Total income	\$3,826,215	\$4,764,985
Drill tool expense	3,002,939	3,744,742
Administrative expense	225,346	221,915
Total expense	\$3,228,285	\$3,966,657
Net income from operations	\$ 597,930	\$ 798,328
Income from interest, discounts, sale of assets	67,884	73,841
	\$ 665,814	\$ 872,169
Less interest expense	65,552	89,141
1	\$ 600,262	\$ 783,028
Less depreciation	690,418	740,344
Net income or loss before taxes	\$ (90,156)	\$ 42,684
Provision for income taxes	0	0
Net income after taxes	\$ (90,156)	\$ 42,684

transportation of the rig, fuel, and water. Overhead was to be allocated at the rate of \$110 a day or a total of \$11,550 for the well. Depreciation for the rig to be used had been set at \$100 per day and for the drill pipe, \$63.49 per day, making a total depreciation charge of \$17,166 for the well. To the total footage cost of \$129,716 a profit margin was added which might be 0-15% of total costs depending on competitive factors and the company's desire to get the job.

The daywork bid was based on certain parts of the footage bid; it was usually the sum of the per-day costs of labor, supplies, maintenance, and fuel, and the daily overhead and rig depreciation charges. For the well described above the daywork costs were estimated to be \$768 per day to which a profit margin was added in forming the bid.

Until 1955 the drilling department's depreciation charges for drilling rigs had been based on original cost and a 2,000 drilling-day life. As will be noted below, the drilling department frequently departed from this objective method of computing depreciation. Ten per cent salvage was deducted from the original cost to find the depreciable value, since this was customary in tax computation and since there always was some salvage value in a worn-out rig.

The depreciation practice of the drilling department may be illustrated by its handling of depreciation charges for rig number 37. The original cost of rig 37 was \$322,900. Based upon this cost, a 2,000-day life, and a 10% salvage value, the depreciation charge should have been set at \$145 per day. The actual charge when the rig was bought in August, 1948, was set at \$138 a day but it was subsequently raised on January 1, 1953, to \$146, and lowered again a year later to \$138 as a result of the difficulty encountered in securing contracts based on the higher cost.

On January 1, 1956, when the daily rates on all rigs were reduced, the daily charge on rig number 37 went from \$138 to \$100. The changes were brought about partly by competitive pressures and partly as a result of a reconsideration of the 2,000-day life. Two thousand days would be equivalent to a seven-year life if the rigs were in use 75% of the time, and management decided at the end of 1955 that the rigs would actually last longer than this.

On August 1, 1956, the daily depreciation charge on rig number 37 was increased from \$100 to \$150 a day as part of a move to standardize the different depreciation charges on the seven rigs in

Drilling and Accounting Department Income Statements
Year Ending September 30, 1955

	Drilling Dept. Cost Summary	Accounting Dept. Income Statement	Difference
Drilling income Direct drilling expense Gross profit	\$3,740,667 3,003,222 \$ 737,445	\$3,826,215 3,002,939 \$ 823,276	\$ 85,548 283 \$ 85,831
Overhead	282,445 \$ 455,000	225,346 \$ 597,930	57,099 \$ 142,930
Rig depreciation Drill pipe depreciation Total depreciation	$ \begin{array}{r} 318,361 \\ 146,539 \\ \hline \$ 464,900 \end{array} $	\$ 690,418	\$(225,518)
Other income		67,884 (65,552)	67,884 (65,552)
Profit before taxes	\$ (9,900)	\$ (90,156)	\$ (80,256)

# Drilling and Accounting Department Income Statements Year Ending September 30, 1956

	Drilling Dept. Cost Summary	Accounting Dept. Income Statement	Difference
Drilling income Direct drilling expense Gross profit	\$4,741,634 3,678,610 \$1,063,024	\$4,764,985 3,744,742 \$1,020,243	\$ 23,351 (66,132) \$ (42,781)
Overhead	404,082 \$ 658,942	221,916 \$ 798,327	182,166 \$ 139,385
Rig depreciation Drill pipe depreciation Total depreciation	$ \begin{array}{r} 402,680 \\ 221,053 \\ \hline \$ 623,733 \end{array} $	\$ 740,344	\$(116,611)
Other income	\$ 35,209	73,842 (89,141) \$ 42,684	$ \begin{array}{r}     73,842 \\     (89,141) \\     \hline     (7,475) \end{array} $

EXHIBIT 4
Schedule of Drill Pipe Depreciation Rates 1952 Through 1956

Depth of the Well to be Drilled (feet)	Depreciation Per Day 1952	Depreciation Per Day 1953	Depreciation Per Day 1954 and 1955	Depreciation Per Day 1956
4,500	\$39.38	\$33.75	\$32.14	\$38.16
5,000	42.68	36.59	34.84	41.37
5,500	45.83	39.29	37.41	44.43
6,000	48.84	41.86	39.87	47.34
6,500	51.70	44.31	42,20	50.12
7,000	54.44	46.65	44.44	52.77
7,500	57.07	57.07	46.58	55.31
8,000	59.57	59.57	48.63	57.75
8,500	61.98	61.98	50.59	60.08
9,000	64.29	64.29	52.47	62.31
9,500	66.50	66.50	54.28	64.46
10,000	68.63	68.63	56.02	66.52
10,500	70.67	70.67	57.69	68.50
11,000	72.64	72.64	59.30	70.41
12,000	77.78	77.78	63.49	75.39
13,000	82.73	82.73	67.53	80.19
14,000	87.50	87.50	71.42	84.82
15,000	92.10	92.10	75.18	89.28

The 1956 rates are equivalent to the following rates per foot per day at three depths:

When drilling at this depth (feet)	Rate per foot per day is
5,200	1.2¢
9,000	.96
13,000	.8¢

the 15,000-foot class, of which number 37 was one of the oldest. The rates had differed between rigs within one class not because of any difference in equipment or capability, but because the cost price, on which the rates were based, varied between rigs. Though the older rigs had cost less, the management thought that within their useful life they were just as capable as the new rigs and, therefore, wished to charge a standard average depreciation rate on all the rigs in each class. Although bidding purposes were dominant in setting the scale for depreciation charges, identical rates were used by the drilling department for bidding, costing, and preparation of internal operating statements.

When the well was finished, a contract footage cost sheet and contract daywork cost sheet were made up showing the actual out-

of-pocket costs incurred on a well and the estimated depreciation and overhead costs based upon the actual number of days and the daily factors. At the end of the year, the sum of the daily depreciation charges incurred by operation of the rigs was entered in a drilling department cost summary sheet. Exhibit 3 shows the cost summary figures for the years ending September 30, 1955 and 1956, and a reconciliation with the accounting department's figures for the same period as shown previously in Exhibit 2.

The drill pipe depreciation charge which the drilling department included in its bid was computed for each well at a rate per day per depth of the well to be drilled. The charges shown in Exhibit 4 were computed by a rather complicated formula, part of which accounted for the rate of penetration and the time required for lowering and for pulling out the drill pipe. The 1956 rates correspond roughly to the three rates per foot per day for wells of various depths shown at the bottom of Exhibit 4.

As with rigs, the depreciation charges on pipe were entered on the bid and cost sheets and at the end of the year the total of the cost sheet charges was entered in the drilling department's cost summary sheet.

# **Depreciation Rates Used in the Accounting Department**

For reporting to both the stockholders and the government, the Bighorn Drilling Company charged against income a flat depreciation rate on the average gross investment in both rigs and drill pipe. This so-called composite rate method of depreciation was calculated as follows: To the beginning balance of gross investment was added the cost of additions made during the year, and from that sum was subtracted the year's reductions, leaving a final balance of gross investment. A percentage of the average of the beginning and ending balances was the depreciation sustained for the year and was charged to the reserve. The balance in the reserve account could never exceed 90% of the gross account, since it was assumed there would always be a 10% salvage value. The Bighorn Drilling Company had started this system in 1946, using a 25% depreciation rate, but subsequently on recommendation both by the company's auditors and by the Internal Revenue Service the rate was reduced in 1950 to 17%, and again in 1954 to 15%, which was the rate used in the year ending September 30, 1956.

The controller made one final notation in his study of past depreciation rates. Since 1952 the accounting department had been capitalizing expenditures on major overhauls of equipment by charging them directly to the depreciation reserve account. The drilling department, on the other hand, charged the overhaul expenditures as direct drilling expenses. Exhibit 5 shows the amounts which had been charged over the last five years by the accounting department to the depreciation reserve. The left-hand column shows the accounting department's depreciation charge for rigs and pipe. Since Bighorn also owned trucks, automobiles, buildings, and other assets, the total depreciation charge for all assets shown in Exhibit 2 was somewhat greater than the depreciation charge for rigs and drill pipe shown in the first column of Exhibit 5. The second column of

EXHIBIT 5

Major Overhaul Charges
(Accounting Dept. Figures)

	Depreciation on	Overhauls	Net Change
	Rig and Drill	Charged to	Depreciation
	Pipe	Reserve	Reserve
1947 1948 1949 1950 1951 1952 1953 1954 1955 1956	323 294 401 399 446 531 597 573 601 651	1 9 69 85 140 304	323 294 401 399 446 530 588 504 516 511

Exhibit 5 shows overhauls charged to the reserve, and the third column shows the net change in the depreciation reserve as reported by the accounting department. The controller considered that this column showed what the net charge for depreciation on rigs and drill pipe by the accounting department would have been if major overhauls had been charged to expense rather than capitalized. As such, the figures in the last column should correspond with the drilling department's charge since that department did charge overhauls to expense.

## Controller's Examination of Rig Life and Prices

Having collected information on what the depreciation rates had been, the controller set to work gathering and examining information on what the future depreciation policy of the company should be. The following four tabulations were made:

- 1. The age, original investment, and replacement cost of each rig in use on September 30, 1956: Exhibit 6.
- 2. The estimated present resale value of two rigs in each class: Exhibit 7.
- 3. The present age and original investment cost of some of the major items of equipment used on each rig: Exhibit 8.
- 4. The age at the time of trade of those rigs which were traded for new rigs over last ten years: Exhibit 9. No other rigs were sold.

Mr. Able, the vice-president in charge of drilling, was asked for his opinion on the life expectancy of rigs. He had been in the drilling business all his life, working his way up through many positions to his present post in which he was directly responsible for bidding on contracts and for drilling performance.

Mr. Able said that in his opinion "maintenance and depreciation are tied together," and that there is "no such thing as obsolescence in this business now." There were different ways, he said, of treating drilling equipment which would affect its life. One could spend practically nothing on maintaining it and when breakdowns occurred either replace or overhaul the equipment; or one could periodically inspect and maintain the equipment as he had done in Bighorn. With his preventative maintenance policy he said annual maintenance costs were high (see Exhibit 10), but expensive breakdowns were fewer, safety was improved, and equipment life extended.

Mr. Able also pointed out that all pieces of equipment on drilling rigs do not wear out at once, but rather that the components must be replaced at different times. As a rough approximation of the order in which the major items would wear out, he cited the following order of components: rotary table and swivel would wear out first, followed by the pumps, the engines, the draw-works, and the crown and travel block. "The derrick," he said, "never wears out." On the whole rig, he said, the 2,000-day life was too short; rather he thought about 15 years at 70% utilization would be closer.

Age, Investment, and Replacement Costs of Drilling Rigs
September 30, 1956

Rig No. and Class	Age	Actual Original Investment	New Replacement Cost
Class I—7,500'  8	2 yr., 7 mo.	\$247,202	\$320,000
	6 yr., 9 mo.	143,952	265,000
	4 yr., 2 mo.	192,211	275,000
	4 yr., 6 mo.	194,455	287,000
Class II—10,000' 15	2 yr., 10 mo.	\$351,515	\$435,000
	3 yr., 11 mo.	315,820	435,000
	4 yr., 5 mo.	282,900	422,000
	4 yr., 10 mo.	268,327	420,000
	4 yr., 0 mo.	304,640	428,000
Class III—12,000—15,000′ 9 37 39 40 41 42 44 Average	8 yr., 6 mo.	\$296,055	\$475,000
	8 yr., 2 mo.	322,887	505,000
	5 yr., 11 mo.	301,132	483,000
	9 yr., 7 mo.	246,968	460,000
	2 yr., 5 mo.	445,337	502,000
	10 yr., 3 mo.	163,488	440,000
	5 yr., 3 mo.	237,026	510,000
	7 yr., 2 mo.	287,556	482,000

**EXHIBIT 7**Estimated Present Value of Rigs September 30, 1956—in thousands

Rig Number	Date of Acquisition	Age	Original Cost	Present Value *	Replacement Cost
Class I 26 36	December 1949 July 1952	6 yr., 9 mo. 4 yr., 2 mo.	\$144 192	\$ 70 82	\$265 275
Class II 24 33	October 1952 April 1952	3 yr., 11 mo. 4 yr., 5 mo.	\$316 283	\$180 170	\$435 422
Class III 37 40	July 1948 February 1947	8 yr., 2 mo. 9 yr., 7 mo.	\$323 247	\$210 120	\$505 460

<sup>\*</sup> Amount to be realized upon sale.

EXHIBIT 8

# Major Items of Equipment September 30, 1956

Item	Total Investment	Average Age in Years	Age of Oldest	Age of Newest
Draw-works	\$ 559,440	5.6	9	2
Engines	444,888	5.6	12	2
Pumps	426,240	8	15	1/2
Compounds	415,584	5.6	9	2
Derricks	264,402	7.4	12	2
B.O.P	161,172	7.4	13	1/ /2
Brakes	132,534	5.6	9	2
Tanks	99,234		16	1/2
Rotary tables	71,262	8.9	15	1
Feed controls	66,600		8	2
Houses -	60,606		12	1/2
Travel blocks	43,956	7.9	13	1/2
Crown blocks	43,956	7.6	11	4
Swivels	37,296	8.6	15	1
Total investment	\$2,827,170			

NOTES: 1. Age is calculated back to the date of manufacture (estimated in cases of used equipment).

2. Investment is the actual purchase price, new or used.

# EXHIBIT 9

# Schedule of Age of Rigs When Traded

Rig Numbe	r *	Age
8		10 years, 8 months
15		8 years, 1 month
29		7 years, 5 months
33		6 years, 1 month
34		5 years, 9 months
24		5 years, 10 months
36	Second-hand-Based on date of manufacture	6 years, 1 month
	Based on date purchased by Bighorn	4 years, 11 months
26		8 years, 7 months
38	Second-hand-Based on date of manufacture	5 years, 7 months
	Based on date purchased by Bighorn	3 years, 2 months
40	Second-hand-Based on date of manufacture	7 years, 4 months
	Based on date purchased by Bighorn	2 years, 7 months
39	Second-hand-Based on date of manufacture	5 years, 11 months
	Based on date purchased by Bighorn	3 years, 5 months

<sup>\*</sup> Whenever a rig is traded, the new rig maintains the number of the rig it replaces.

EXHIBIT 10

Maintenance Costs—Average Total Cost and Average Cost per Day by Class of Rig and Year

	1952	1953	1954	1955	1956
Class I Average total cost	\$33,848	\$24,812	\$29,724	\$21,499	\$26,318
	161	186	188	148	140
Class II  Average total cost  Average cost per day	\$18,727	\$39,654	\$41,071	\$32,623	\$37,159
	262	216	216	164	206
Class III  Average total cost  Average cost per day	\$50,308	\$45,373	\$30,639	\$40,454	\$37,692
	242	224	238	205	197

The controller decided that, while collecting information on the life of rigs, it would be useful to know something about the price changes which had taken place. Although it was Mr. Able's contention that "the only basis for depreciation is original cost," the controller felt that some cognizance of the changes in replacement cost was necessary for sound financial administration. As a result, he gathered the information on price changes shown in Exhibit 11.

# Controller's Examination of Drill Pipe Life and Prices

The controller turned next to drill pipe. It was clear that drill pipe lasted a shorter length of time than the rigs and was usually used until worn out. For as short a period as five years, it was possible to make a useful comparison between actual costs of pipe and the depreciation charges which were reported each year by the drilling department on its summary cost sheet. The actual cost of pipe used was obtained by computing a depreciated value for the pipe inventory on September 30, 1951, adding to this the recorded purchases of pipe during the succeeding five-year period, and subtracting from the sum the depreciated value of the ending inventory. The total five-year cost calculated by this method was \$1,290,000; the total pipe depreciation charged by the drilling department over the same period was \$1,299,000.

The similarity of these depreciation and cost figures indicated to the controller that the drilling department's charges for pipe depre-

EXHIBIT 11
Indices of Prices Based on Actual Purchases
of Three Rig Components and Drill Pipe

Year	Engines *	Draw-works *	Rig Tables *	Drill Pipe **
1947 First half		85		
1947 Second half				
1948	100	100	100	
1948	100	99	115	
1949	111			
1949				
1950				
1950		106	126	100
1951				
1951				
1952				
1952			131	107
1953			139	116
1953	164			121
1954	163		146	
1954	170		153	125
1955		129		
1955	179		165	135
1956				142
1956	195	150	180	155

<sup>\*</sup> Base period: First half of 1948.

ciation were close to the actual costs of the pipe during the five-year period. To see how these figures compared with the accounting department's 15% flat rate, he compared an average of the drilling department's yearly charges for the five-year period (\$260,000) with a figure for average drill pipe investment in the same period (\$1,286,000). The latter figure was an average of the five figures representing average pipe investment for each of the five years. The two figures showed that for the five-year period the average drilling department depreciation rate on pipe had been 20.2% of the average investment in pipe during each year.

In order to examine the magnitude of the different charges on the books, which would have resulted from different depreciation rates on rigs and drill pipe over the past ten years, the controller prepared the table shown in Exhibit 12. For a basis of comparison he showed the accounting department charges and the aggregate drilling department charges for the same period. He noted that for compara-

<sup>\*\*</sup> Base period: Second half of 1950.

#### EXHIBIT 12

## **Depreciation Charges**

A. Past depreciation charges as shown by the drilling department and the accounting department—in thousands

Year	I	Accounting Department		
	Rigs	Drill Pipe	Total	Rigs and Pipe
1947	\$ 205	\$ 89	\$ 294	\$ 323
1948	178	81	259	294
1949	215	125	340	401
1950	256	132	388	399
1951	278	178	456	446
1952	325	186	511	531
1953	292	161	453	597
1954	311	151	461	573
1955	318	147	465	601
1956	403	221	624	651
Total	\$2,781	\$1,471	\$4,251	\$4,816

B. Depreciation which would have been charged if the following three combinations of rates on rigs and pipe had been charged over the past 10 years—in thousands

	Combination 1	Combination 2	Combination 3	Equivalents
Rigs 10% 8% 6%	\$2,339	\$1,871	\$1,404	9 year life, 10% salvage or 8 year life, 20% salvage 10 year life, 20% salvage 15 year life, 10% salvage
Pipe 22.5% 20.0% 18.0%	1,355	1,203	$\frac{1,084}{$2,488}$	4 year life, 10% salvage 4 year life, 20% salvage 5 year life, 10% salvage

bility with the drilling department figures and with the three test combinations, the accounting department depreciation charges should be reduced by the major overhaul charges shown in Exhibit 5. This would reduce the \$4,816,000 total to \$4,512,000. At the same time the accounting department expense figures should be increased a like amount if the accounting department profits were to be unaffected by the adjustment.

## Conclusion

The controller now had all the information he could reasonably assemble from the company's records. From this data his task was to draw some conclusions for internal management purposes as to how well the drilling department had actually done in the past five to ten years. He would also be called upon to recommend a depreciation policy stating what rates should be charged in the future. It was questionable whether the Internal Revenue Service would continue to allow a fifteen per cent composite rate. The usefulness of this rate for reporting to stockholders was also in doubt. And, finally, internal management wanted to know what sort of reports could be made which it could count on in the future to show an accurate picture of the performance of the drilling operation.

## THE REECE CORPORATION

The Impact of Inflation on Corporate Reporting

This case provides a framework within which the impact of price level changes on financial reporting may be considered. It examines the efforts of a smaller company to bring this phenomenon to the attention of its stockholders and the public in general.

During 1953, the American Accounting Association, under a grant from the Merrill Foundation for the Advancement of Financial Knowledge, undertook a research project on the effects of inflation on capitalistic enterprise. As a part of its research project, the Association planned a series of four case studies of American corporations.

One of the companies offering to cooperate in the study was The Reece Corporation of Waltham, Massachusetts. Mr. Franklin Reece, the president, had long been concerned with the possible misunderstanding and danger arising during a period of inflation in which no planned account is given in published statements of the changes taking place in the purchasing power of the dollar.

In the case study, The Reece Corporation was discussed as follows:

The Reece Button Hole Machine Company was founded and incorporated in 1881 under the laws of the state of Maine for the purpose of producing and marketing John Reece's invention, the first machine automatically to stitch eyelet-end buttonholes in the high button shoes of that day. In the following year, a second Maine corporation, The International Button Hole Sewing Machine Company, was separately capitalized and became the exclusive marketing agent for Reece products in foreign countries.

From its inception, the Company has specialized in automatic sewing machines for such short cycle stitching operations as button sewing, tacking, short-seam overedging, and eyelet stitching in addition to the many varied kinds of buttonhole sewing required by the shoe and garment industries. The Company, it is believed, was among the first to lease exclusively rather than sell its products. This policy was followed until 1930 when an irrevocable ninety-day option to purchase or lease was granted to customers upon the installation of new equipment.

In 1948, the two original companies merged to form a new Massachusetts corporation, The Reece Corporation. In 1949, its manufacturing departments

were moved from Boston to Waltham, and in 1954 the administrative, sales, and engineering departments also were moved there. The Company maintains branch offices for sales and service in twenty major garment producing centers in the United States. Five subsidiary companies and twenty-eight agents in thirty-three foreign countries sell, lease, and service its products abroad.<sup>1</sup>

As a result of the study conducted by the American Accounting Association with The Reece Corporation, The Reece Corporation began including information in its annual report on the price level problem. In its seventy-fourth annual report for the year ended December 31, 1955, The Reece Corporation included the data shown in Exhibit 1.

Do you think this step by The Reece Corporation is a desirable one for it to take? Should other corporations do the same?

What other steps, if any, should corporations take to bring the price level problem to the attention of their stockholders and the public?

Do you anticipate Mr. Brooks, the treasurer, will get much response from his request? What type of response do you think it will be?

#### EXHIBIT 1

Excerpt from the Annual Report for Year Ended December 31, 1955

The purpose of the Price Level Study is to compare the Company's financial statements as prepared by conventional accounting with these same statements

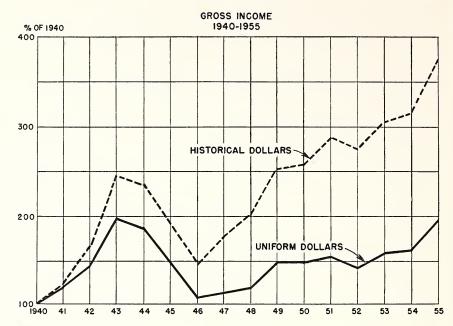
after adjustment to show the effect of inflation.

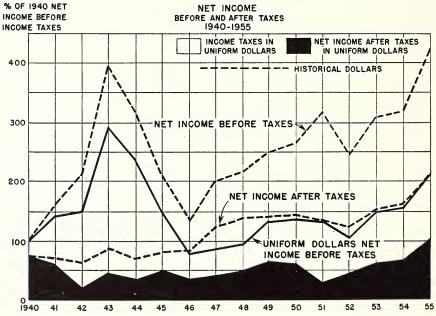
In applying the Price Level Study to the Company's figures, we compare Historical Dollars—those with which we are all sadly familiar and which have lost more than half their purchasing power in the last fifteen years—with Uniform Dollars. The Uniform Dollar used is defined as a uniform measuring unit whose purchasing power is equal to the 1955 dollar. In order to prepare the accompanying charts, the Company's financial statements from 1940 to date have been restated in 1955 Uniform Dollars by means of index numbers based on the Consumers Price Index. For chart purposes, both Historical Dollar and Uniform Dollar amounts have been expressed as a percentage of 1940 in order to establish a common point of departure.

From the first chart, it is apparent that, in Historical Dollars, Gross Income was almost four times as large in 1955 as it was in 1940, whereas in Uniform Dollars it is only about twice as large. 1955 net income after taxes in Historical Dollars is 2.9 times as great as that for 1940, yet in Uniform Dollars it is only

1.4 times as large.

<sup>&</sup>lt;sup>1</sup> Ralph C. Jones, Case Studies of Four Companies (Columbus, Ohio: American Accounting Association, 1955), p. 110.





Fortunately, the Price Level, or cost of living, has increased only slightly in the last four years; therefore conventional accounting methods, which entail the use of Historical Dollars, do not seriously distort the income statement for 1955. Nevertheless, in converting 1955 figures to Uniform Dollars, we find that depreciation, charged without regard for actual replacement cost, is understated by \$49,000 and taxable income overstated by \$44,000, the difference representing an adjustment to cost of sales. It follows that the Federal Income Tax applicable to these fictitious earnings is a tax on capital.

Studying a Company's financial statements when expressed in Uniform Dollars has a sobering effect in these days of high production, apparently high profits, and general prosperity. The true growth of a company becomes apparent, the false basis of taxable income is highlighted and, in the case of this Company, one finds that earnings plowed back in the business are only about fifty-eight per cent as large as indicated by conventional accounting practice.

The rising cost of machinery and buildings over the last fifteen years is one of the most serious problems that face manufacturing companies. These costs have gone up significantly faster than is indicated by the Consumers Price Index which has been used in preparing this Price Level Study. Unfortunately, we do not know of a Price Index that could properly be applied to a manufacturing concern so we have used the Consumers Price Index, but we recognize that it falls short of indicating the full effect of inflation on this Company. The Price Level Study indicates that the Company's reserves for depreciation are 25% or \$703,000 less than they should be. No doubt the true inadequacy of the reserves is nearer 40%, or more than \$1,000,000. As equipment wears out or becomes obsolete, it must be replaced. Since depreciation reserves are inadequate to provide for replacement, retained earnings or borrowed money must be used to help pay for the replacement equipment.

We believe that the comparison of financial results in Historical Dollars with those converted to Uniform Dollars is an invaluable management tool. However, the theory and application of the Price Level Study is difficult to understand even after considerable study. Therefore, we wonder if it is of interest to readers of this report. Would you please note on your proxy whether or not you think

we should include this section in future reports.

W. D. Brooks, Jr., Treasurer

## THE PAN AMERICAN COMPANY

# Intangible Assets

This case deals with a problem of determining a specific course of action involving the application of generally accepted accounting principles. The issue of conflicting courses of action, both apparently justifiable under "generally accepted accounting principles," is considered.

The Pan American Company, one of the country's largest suppliers of printing inks and related chemicals, had just completed acquisition of a subsidiary late in 1956. With home offices in Chicago, the company had eight plants scattered throughout the country and sales offices in all of the principal cities. The following data were taken from its 1955 annual report:

Sales	\$100,106,000
Net Profit after Taxes	4,707,000
Total Assets	58,075,000
Capital Stock	
Capital Surplus	
Earnings Retained in Business	
Goodwill	1

Immediately after the legal matters pertaining to the new acquisition had been settled, the president had a meeting with his controller and treasurer to discuss the effect of the acquisition on the balance sheet of the company.

The following facts about the new acquisition were all agreed upon:

Purchase price in stock of	
Pan American Company	\$740,300
Tangible Assets acquired Excess of purchase price over book	\$490,300
value of assets acquired	250,000
	\$740,300

The amount of \$250,000 representing excess of the purchase price over book value of assets acquired did not include any trademarks or patents of any significant value.

The president said that, as the company had not made a practice of showing goodwill at other than the nominal value of one dollar, he would prefer to write off the goodwill against capital surplus. The treasurer said this would be improper; the write-off would have to be against earned surplus. The controller disagreed with both, saying goodwill would have to be capitalized and written off against future earnings.

To prove his point, the controller had prepared a memo (Exhibit 1) showing what Colgate-Palmolive-Peet Company had done in 1946 when it acquired Kay Daumit, Inc.

The treasurer said this was only one example, and he could support his own view if necessary. The meeting broke up to resume at a later date.

A few days later the treasurer brought in certain data on General Foods and its acquisition of Perkins Products Company, manufacturers of Kool-Aid, in May, 1953 (Exhibit 2).

"See," he said, "my example is later and just as good as the controller's."

"Well," said the president, "apparently accounting rules and conventions will let you do anything you please. Give me a good, logical reason why I can't do what I prefer with our small acquisition."

#### **EXHIBIT 1**

Acquisition of Kay Daumit, Inc., by Colgate-Palmolive-Peet Company

On November 30, 1946, Colgate-Palmolive-Peet Company acquired, through purchase, Kay Daumit, Inc., and Daumit Beauty Products, Inc. The agreement by which Colgate bought Daumit provided that \$3,750,000 be paid for the goodwill, patents, and formulas of Daumit and \$381,892 for the combined net worth (exclusive of goodwill, patents, and formulas). Part of this consideration was payable in cash, and part in the stock of the Colgate company. The stock to be paid to Daumit consisted of 37,193 shares of common stock of the Colgate company, valued for such purposes at the average closing price of the common stock on the New York Stock Exchange during November, 1946 (\$47.35 per share). The remainder was paid in cash.

## Summary of Transaction

\$ 381.892

Assets	Acqu	ire	е	ŀ	:
Tan	gible				

Goodwill	
	\$4,131,892
Payment:	
Capital Stock	\$1,761,089
Cash	2,370,803
	\$4,131,892

## Data from Balance Sheet of Colgate-Palmolive-Peet Company December 31, 1945

Sales	\$135,368,000
Net Income transferred to Surplus	7,036,000
Total Assets	76,400,000
Capital Stock	37,000,000
Capital Surplus	1,800,000
Earned Surplus	21,500,000
Goodwill	1

In its financial statements, Colgate-Palmolive-Peet Company capitalized the \$3,750,000 of goodwill and stated that it was being written off over a ten-year period.

#### **EXHIBIT 2**

# Acquisition of Perkins Products Company by General Foods

In May, 1953, General Foods acquired the Perkins Products Company, paying \$13,676,814 through the issuance of 249,520 shares of capital stock of General Foods. Of the amount of \$13,676,814, the company immediately wrote off the portion assigned to intangibles (\$6,237,000) against earned surplus.

## Summary of Transaction

Purchase Price	\$13,676,814
Capitalized	\$ 7,439,814 6,237,000
	\$13,676,814

## Data from Balance Sheet of General Foods March 31, 1953

Sales	\$755,919,000
Net Income transferred to Surplus	24,807,000
Total Assets	219,016,000
Capital Stock	142,795,000
Earnings Retained in the Business	76,222,000
Trademarks, Patents and Goodwill	1

# The Role of Financial Analysis in the Management Process

A PHASE OF BUSINESS MANAGEMENT WHICH HAS REALLY JUST BEGUN TO come into its own during the past twenty or so years, and which remains perhaps the most undeveloped aspect of the controller function, is the use of various analytical tools to develop from raw accounting and statistical data information necessary for management purposes. The case materials in this section are designed to provide training in that part of the controller's duties having to do with figure analysis. Some of the cases deal with analysis leading to management decisions, while others are concerned with the comparison of actual performance with the results expected from decisions made in the past. All of them require a highly analytical approach and force the student to bridge the gap between the routine production of accounting figures and the management functions of decision-making and follow-up.

# A. FINANCIAL ANALYSIS AS AN AID IN MAKING MANAGEMENT DECISIONS

- 23. Star Slipper Company
- 24. Bowl-A-Way
- 25. Continental Oil Company
- 26. Velox Oil Company
- 27. Blackstone Mining Company
- 28. Acadia Auto Accessories, Incorporated
- 29. The New England Baking Company

- B. Financial analysis as an aid in measuring performance by function or by organizational unit
  - 30. Global Chemical Company
  - 31. The South American Coffee Company
  - 32. Albertson Steel Company
  - 33. The Wright Knight Company
  - 34. Hydrocarbon Products Company, Inc.
  - 35. Birch Paper Company
  - 36. Long Manufacturing Company
  - 37. Borah Petroleum Company
  - 38. Clark Chemical Company

## STAR SLIPPER COMPANY

## Problem of Product Mix

This case involves a management decision on a product mix problem. It focuses on the cost analysis necessary to provide a sound basis for determining the effect on profits of dropping a product from the company's line.

In July, 1956, Mr. Lester Grant and Mr. Daniel Rogerson, president and treasurer, respectively, of the Star Slipper Company were trying to reverse the unprofitable record which the 18-month-old company had made since the two officers started its operations. During June they had collected cost information which was more detailed than that which they had been using, and Mr. Grant thought that with it they could come to some definite conclusions. Some plan for remedial action, he said, was needed soon, in view of the present financial condition of the company. (See Exhibits 1 and 2.)

The Star Slipper Company manufactured two lines of slippers and casual shoes whose retail selling price ranged from \$1.98 to \$4.98. The two lines differed in their basic construction design. In the "Jenson" line the top part of the shoe was stitched to the sole, whereas in the "Bond" line the top and the sole were cemented together by machine. Although the selling price ranges overlapped, most of the Bond line was lower-priced than the Jenson line.

Star produced the slippers only on firm orders and, except for special rush orders, delivery was usually made months after an order was placed. Orders were usually large, since the customers were well-established shoe store chains, department stores, or shoe wholesalers. At times, however, Star acted almost as a storage agent for its customers' inventory, and for this reason finished goods inventory was valued at its sale price on the statements used for internal management purposes.

When the company was organized, its basic business was considered by Grant and Rogerson to be the Jenson slippers; the Bond

#### **EXHIBIT 1**

## Balance Sheet June 30, 1956

#### Assets

210000			
Cash		\$	941.81
Trade (pledged)	\$198,678.49 14,525.00	21	3,203.49
Merchandise Inventory		42	5,020.25
Current Assets		\$639	9,165.55
Fixed Assets—Cost	\$ 96,812.27 21,520.05	\$ 7	5,292.22
Prepaid and Organization Expenses		10	0,347.79
Total Assets		\$72	4,805.56
Liabilities			
Liabilities  Accounts Payable—Trade  Notes and Loans Payable  Accrued Taxes and Payroll		36	5,755.82 5,458.60 0,972.30
Accounts Payable—Trade  Notes and Loans Payable		36	5,458.60
Accounts Payable—Trade  Notes and Loans Payable  Accrued Taxes and Payroll		363 3633	5,458.60 0,972.30
Accounts Payable—Trade  Notes and Loans Payable  Accrued Taxes and Payroll  Current Liabilities	\$ 60,500.00 30,000.00 90,381.16 *	363 3633	5,458.60 0,972.30 2,186.72
Accounts Payable—Trade Notes and Loans Payable Accrued Taxes and Payroll Current Liabilities  5% Debenture Bonds—Due 1965 Preferred Stock Common Stock	30,000.00	363 3633	5,458.60 0,972.30 2,186.72

<sup>\*</sup> Red figure.

line was added to use some of the excess production space in the five-story plant and to contribute to the company's basic overhead cost. Except for a few operations the Bond and Jenson slippers were produced on separate lines. "It is almost like two separate plants," Mr. Grant commented. Only on the few operations common to both lines were workers supposed to work on both Bond and Jenson slippers. However, as plans turned out, some indirect labor worked on both production lines and occasionally direct labor was shifted between lines.

When production started, there were two foremen, two repairmen, a cobbler, and about twenty-five production workers assigned to the Bond line. However, difficulties appeared in the production process,

Income Statements
(For internal management uses only)

Year to Dec. 31, 1955	6 months to June 30, 1955	6 months to June 30, 1956
\$177,305.72 615,469.08 125.50 \$792,900.30	\$ 55,701.80 123,995.50 125.50 \$179.822.80	\$236,690.83 172,437.17 1,309.30 \$410,437.30
$\begin{array}{c} 3,746.33 \\ \hline 5790,153.97 \end{array}$	$\begin{array}{c c}  & 0.00 \\ \hline  & $179,822.80 \end{array}$	3,522.71 \$406,914.59
0.00 \$542,479.77 203,943.41 11,669.25 17,196.85 \$775,289.28 133,591.40 \$641,697.88 148,456.09 \$117,368.25	$\begin{array}{c} 0.00\\ \$225,343.45\\ 65,363.60\\ 3,951.23\\ 7,006.08\\ \hline \$301,664.36\\ 174,056.48\\ \hline \$127,607.88\\ \hline 52,214.92\\ \hline \$50.620.95\\ \hline \end{array}$	\$133,591.40 °° 393,068.01 181,333.54 10,783.63 13,079.96 \$731,856.54 425,020.25 † \$306,836.29 100,078.30 \$87,366.77 † †
$ \begin{array}{r} 26,650.82 \\ 52,338.24 \\ \hline \$196,357.31 \end{array} $	$ \begin{array}{r}                                     $	15,632.89 28,360.56 \$131,360.22
\$ 47,901.22 ‡ 8,909.76	\$ 35,794.60 ‡ 903.69	\$ 31,281.92 ‡ 1,259.91
$\frac{3,762.76}{\$ 11,759.70}$	\$ 1,803.44	7,330.28 2,277.71 \$ 9,607.99 \$ 39,630.00 ‡
	\$177,305.72 615,469.08 125.50 \$792,900.30 2,746.33 \$790,153.97  0.00 \$542,479.77 203,943.41 11,669.25 17,196.85 \$775,289.28 133,591.40 \$641,697.88 148,456.09 \$117,368.25 26,650.82 52,338.24 \$196,357.31 \$47,901.22 \$\$8,909.76  7,996.94 3,762.76	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$

<sup>\*</sup> Since slippers were produced only on firm orders, finished goods inventory was valued at the selling

quality suffered, and two repairmen and four inspectors were added to cut the number of customer returns. Exhibit 3 lists the number of workers on the Bond line in July, 1956, and their approximate annual pay.

For each item to be produced, a cost sheet was made, showing the

<sup>\*\*</sup> Inventory at the start of the year was almost all raw material.

<sup>†</sup> Approximately \$64,000 of this was Bond slippers, \$227,000 was Jenson slippers, and the rest was raw material.

<sup>††</sup> Includes \$34,479.52 of indirect labor (inspectors, repairmen, cobblers, etc.).

<sup>‡</sup> Red figure.

#### EXHIBIT 3

## Workers on the Bond Line-July 1, 1956

## Approximate Annual Pay per Man

2	Foremen	\$5,000
4	Repairmen	3,000
1	Cobbler	3,000
4	Inspectors	3,500
25	Pieceworkers	3,600

#### **EXHIBIT 4**

## Schedule for Overhead Charges for 1956— Jenson slippers (per pair)

Retail Price	Estimated % of Total Volume	Overhead to Be Charged
\$4.98	10%	\$.40
3.98	40%	.38
2.98	30%	.36
1.98	20%	.34

material and labor cost per dozen pairs and an allocated overhead figure. The material cost was based on estimates or, when available, actual cutting records and yardage cost. Labor cost was mostly piece-rate work with some hourly labor in addition. The overhead allocation was made at the beginning of the year by estimating the total overhead and the sales volume in pairs at different prices. An average overhead charge was then calculated and adjusted to different prices in such a way that if volume and mix came out as estimated, all overhead would be absorbed. For example, the \$1.98 (retail) slipper carried 34 cents of overhead, and the \$4.98 slipper, 40 cents of overhead. (See Exhibit 4.)

The cost sheets were used in pricing and as a basis for decisions on the adoption of new products. The manufacturer's selling price was usually determined by the customary retail selling prices of \$1.98, \$2.98, \$3.98, etc. There was, however, some flexibility in the manufacturer's selling price, since the retailer's margin could vary with differences in material or with pressures of supply and demand at the time the order was given. Mr. Grant would decide whether to accept an order by adding material, labor, allocated overhead, and a five-cent profit per pair and comparing this total with the

EXHIBIT 5

Cost Summary Sheet

	Jenson Line				Bond Line
Model	А	В	С	Weighted Average *	D
Date First Order	Nov. 19, 1955	Jan. 15, 1956	Nov. 30, 1955		Apr. 9, 1955
Material per Dozen Labor per Dozen	17.50	12.21	7.96	13.52	8.17
(piecework)	5.71	6.21	4.04	5.50	3.63
Overhead per Dozen	4.56	4.32	4.08	4.38	3.36
Factory Cost per					
Dozen	27.77	22.74	16.08	23.40	15.16
Profit		60	0		0
per dozen	28.37	23.34	16.08	23.87	15.16
per pair †	2.36	1.94	1.34 **	1.99	1.26
Selling price					
per dozen	28.20	22.20	14.70	23.40	15.36
per pair	2.35	1.85	1.25 **	1.95	1.28
Retail Price	3.98	2.98	1.98		

<sup>\*</sup> The weights used were the percentages of total volume shown in Exhibit 4.

selling price he thought he could get. The cost and profit figures seldom matched the selling price exactly but sometimes left a larger than expected profit above the allocated overhead, and sometimes no profit at all. The absence of projected profit did not necessarily mean that Mr. Grant would reject the order, for often a counteroffer at a higher price would be accepted by the customer. Furthermore, Mr. Grant had occasionally accepted orders which yielded no profit above the allocated overhead.

Exhibit 5 shows Cost Sheet Summaries of three of the highest volume Jenson slippers and the major slipper in the Bond line. Mr. Grant indicated these were typical and representative of each of the lines.

In early 1956, Mr. Grant began to suspect that most of the losses the company had been sustaining were caused by the Bond line of

<sup>\*\*</sup> Slippers made with three grades of material were all sold at \$1.25 in about equal amounts. Costs per pair with the other two grades were \$1.31 and \$1.26. These variations were included in the weighting process.

<sup>†</sup> Cost per pair is a rounded figure and, therefore, is not exact in all cases.

**EXHIBIT 6**Direct Labor Costs by Product Line (per pair)

	Jenson	Bond
Piecework Day Labor ° Hourly Time Make-up †† Overtime Total	.038 **	.308 .067 .059 † .069 .009 .512

\* Inspectors and cobblers.

\*\*.003 of this was for production of samples, .012 for repairs, and .023 for work for which there were no piece rates.

 $\dagger$  .003 of this was for production of samples, .044 for repairs, and .012 for work for which there were no piece rates.

†† Pay for training time or other time when piecework pay did not come up to guaranteed pay.

slippers. Accordingly, in May, labor costs for each product line were recorded separately for the first time. Exhibit 6 shows figures for the five different categories of labor which were average for the eight-week period preceding June 30.

Before coming to any conclusion on the profitability of the Bond line, Mr. Grant examined the consequences of various decisions. If no change in sales policy were made, Bond slipper sales of about \$350,000 could be expected by the end of the year. This might be increased to \$400,000 if special efforts were made to get the slippers to new customers, but Mr. Rogerson said that this second figure was pretty much a ceiling for the present Bond line.

Mr. Grant said that there were more workers on the Bond production line in June, 1956, than should be needed. Since operations had begun, extra repairmen and inspectors had been added to maintain adequate quality. Even though the superintendent had been spending most of his time on this problem, little improvement had resulted, and Mr. Grant was uncertain how long it would take before the number of inspectors and repairmen could be reduced to the normal complement with which the line had started.

If the Bond line were to be dropped entirely, Mr. Grant thought that he could get along without the superintendent, who was nearly ready to retire anyway, and also save about \$5,000 in office and shipping expenses annually. He would also be able to ship his rented

machines back to the United Shoe Machinery Company for about \$1,500, eliminating an annual rental of \$2,500. And, finally, Mr. Grant estimated that an additional \$3,000 in general overhead expenses would also be eliminated.

What course of action would you prescribe for the Star Slipper Company?

## **BOWL-A-WAY**

# Appraising Capital Expenditure Projects

The Bowl-A-Way case deals with a decision concerning the expenditure of capital funds. It focuses on the analysis necessary to establish the alternatives open to a company and on the choice from among those courses of action.

In August, 1955, Mr. Nathan Peters decided to build Bowl-A-Way, an amusement center with sixteen bowling alleys, on a well traveled highway near Boston. The plans were completed except for possible provisions for resetting pins, and Mr. Peters was debating whether to use pin boys or pinsetting machines. There were three such machines available for purchase, two of which could also be obtained under lease arrangements. One of the latter two machines could be rented under a contract which included an arrangement whereby the lessee could buy at a later date at a reduced price.

# Pin Boys

Mr. Peters knew that the initial cost would be low if the decision were made to use pin boys. He was afraid, however, that there was a chance that the presence of pin boys might have an adverse effect on the type of customers he hoped to attract. He expected that a large part of his business would come from children, families, and mixed bowling leagues. He had noticed that pin boys working at other alleys sometimes behaved in a manner which might not make the best impression on this type of customer. In any case he knew that careful supervision would be necessary.

The only investment required if pin boys were employed would be about \$25 per alley for pinsetting guides. The going rate in the area for setting pins was 12 cents a string,<sup>1</sup> to which indirect labor costs such as social security, unemployment compensation, and ac-

<sup>&</sup>lt;sup>1</sup> A string, or game, is a series of ten frames in which one, two, or three balls are bowled.

cident insurance would add about 20 per cent. Five boys were usually needed to operate four alleys; a total of twenty would be required for the proposed sixteen alleys. These employees would have to be drawn from the 16- to 18-year age group since the minimum legal age was 16 and boys over 18 could normally find higher paying jobs.

# **Pinsetting Machines**

Three makes of pinsetting machines were available: Bowl-Mor pinsetters made by Bowl-Mor Corporation of Everett, Massachusetts; Bowlfast pinsetters made by Simmons Machine Tool Corporation in Albany for Bowling Machines, Inc.; and Greer pinsetters made by the J. W. Greer Company in Wilmington, Massachusetts. Bowl-Mor and Bowlfast machines could be either bought or leased, but the Greer Company offered its machines only for sale.

## **Purchase Arrangements**

All three machines sold for \$3,600 each. (See Exhibit 1.) Freight and installation charges on the Bowlfast and Greer machines were paid by the manufacturer, but the customer paid for these charges on the Bowl-Mor machines. Bowl-Mor Corporation charged \$125 per machine for installation and estimated that the freight cost to Mr. Peters would be \$10 per alley. The parts of Bowlfast and Greer machines were guaranteed for one year; Bowl-Mor's warranty cov-

**EXHIBIT 1**Data for Purchasing Pinsetting Machines

	Bowl-Mor	Bowlfast	Greer
Purchase Purchase price Installation Freight	\$3,600	\$3,600	\$3,600
	125	included	included
	10	included	included
Guarantee Parts and Labor Parts	90 days	1 year	30 days 1 year
Financing Part which can be financed Interest Repayment period	75%	80%	75%
	6%	6%	6%
	36 months	48 months	36 months

ered only ninety days. Greer also agreed to pay any labor charges incurred for the replacement of parts in the first thirty days; neither of the other companies made this offer.

Financing could be arranged by all three companies. Bowlfast agreed to finance 80 per cent of the sales price over 48 months, and the other two would finance 75 per cent over 36 months. All three firms charged interest of 6 per cent per year on the total amount of the loan.

## Lease Arrangements

Bowl-Mor and Bowlfast machines could be leased under the following conditions: The rent on the Bowl-Mor machine (Exhibit 2) was \$720 a year for four years, and would probably be \$480 thereafter. An initial lease of four years would be required, followed by four-year leases at the option of the lessee. The uncertainty of the rental fee after the initial lease period was due to the fact that very few machines had been in operation in the area for four years, and fees for subsequent lease periods would be subject to negotiation. Freight and installation costs on the Bowl-Mor machine would be paid by the lessee; insurance on the machine would be paid by the manufacturer.

The rental fee on Bowlfast machines was ten cents a string with a minimum fee of \$40 a month on an initial lease of four years. Subsequent four-year leases could probably be negotiated at five cents a string and \$40 a month minimum. The manufacturer of the Bowlfast machines paid the freight, installation, and insurance costs. The

**EXHIBIT 2**Data for Leasing Pinsetting Machines

	$Bowl ext{-}Mor$	Bowlfast	Greer
Annual Rent— First four-year period	\$720	\$.10 per string minimum of \$40 per month	No Rental
Annual Rent— Subsequent periods	\$480	\$.05 per string minimum of \$40 per month	
Freight	\$10 by lessee \$125 by lessee paid by lessor	paid by lessor paid by lessor paid by lessor	

manufacturers of both Bowl-Mor and Bowlfast pinsetters employed servicemen to do major repair work on the machines; most alleys, however, did their own minor repair work and maintenance.

## **Option to Purchase**

The lease arrangements for the Bowl-Mor machines gave the lessee an option to buy the machine at three different points during the four-year lease. When the machine was six months old, it could be purchased with 80 per cent of the total past rental payments applied to the original price. At 24 months 60 per cent of the past rents could be applied to the purchase price, and at 48 months 40 per cent of the past rents could be applied.

# Option for Reduced Rent on a Longer Lease

There was also included in the Bowl-Mor lease an option to substitute a seven-year lease at \$540 a year. This option could be exercised only after sixteen months of the original lease, and would thereby extend the total lease period to eight years, four months. If this option were elected, the purchase option would no longer apply unless the \$15 a month difference were paid for all the months in which the reduced rent had been paid.

#### Volume of Business

It was expected that the alleys could be open daily from 2 p.m. to 11 p.m., but the volume of business which might be available was not easy to predict. The charge for bowling would be 25 cents a string before 5 p.m. and 35 cents from 5 p.m. until 11 p.m. Mr. Peters thought that with an alley in constant use a pin boy would set an average of six strings an hour. But since constant use would only occur in the evening hours, he estimated that thirty strings a day per alley was all that could be reasonably expected if pin boys were used. The pinsetting machines, however, had a capacity speed of eight strings an hour and Mr. Peters anticipated that with machines he would average forty strings a day per alley.

## Some Additional Factors

There were some additional factors Mr. Peters had to consider. Each machine would require electrical power extensions costing about \$150 per alley. If he bought the machines, his annual property

insurance costs would rise \$14 per alley. He would have to hire a maintenance man for around \$75 a week whether he bought or rented the machines.

Electrical power costs were expected to be relatively insignificant. Each machine had six fractional horsepower motors; the one-third and one-sixth horsepower motors ran continuously; the other four, which amounted to one horsepower (about 1,000 watts), ran eleven seconds during each cycle, about twelve of which were required on the average to process a string. The electrical power would cost \$.01 per kilowatt hour.

Mr. Peters examined each of the three machines in operation and came to the conclusion that there was little difference in their reliability or speed. The Bowl-Mor machine was perhaps slightly less noisy but on the whole each did the job satisfactorily. In addition, there seemed to be no reason why one machine would last longer than another, though just how long they would last was difficult to determine. They would surely last for five years, and probably for ten. All machines could be modified for around \$35 each year, the manufacturers said, to keep abreast of design improvements. If this were done, the machines would almost certainly last for ten years. There had been almost no major improvements over the past three years, and none of the companies appeared to be working on any radical improvements for the near future.

Mr. Peters now had all the information he could gather on pin boys and pinsetting machines. Any saving in operating costs which might result from use of the machines would be partially offset by an increase in the income tax liability, which he expected would be about 30 per cent of income before taxes. His next task was to arrange and interpret the facts so that he could compare the use of pin boys and pinsetting machines, and so that he could determine which machine would cost him the least and whether to consider buying or leasing.

What course of action would you recommend to Mr. Peters?

## CONTINENTAL OIL COMPANY

# Appraisal of Capital Investments

This case deals broadly with the area of capital budgeting. It raises such questions as the handling of uncertainty, cost of capital, and the discounting of future cash flows, as these factors relate to the decision as to whether to accept or reject specific capital projects. It also raises many of the administrative problems which are involved in establishing and implementing a capital budgeting policy for a company.

The Continental Oil Company is an integrated oil company, ranking among the twenty largest oil companies incorporated in the United States. Its marketing operations cover the central and Rocky Mountain portions of the United States; refining and pipeline facilities are located in these same areas. Producing facilities are located from the Williston Basin in Montana, North Dakota, and South Dakota to offshore wells on the Louisiana coast, and from California to Indiana.

#### **Financial Data**

Consolidated balance sheets of the company for December 31, 1954, and December 31, 1953, as they appeared in the annual report of the company for 1954 are shown in Exhibit 1.

The statement of consolidated income and earned surplus for the year ended December 31, 1954, and December 31, 1953, is shown in Exhibit 2.

A summary of the highlights of the financial and operating aspects, also taken from the 1954 annual report, is shown on pages 232-233.

#### The Problem

In the summer of 1954 the president of the Continental Oil Company asked one of his assistants and the controller to review the

EXHIBIT 1

Consolidated Balance Sheet at December 31, 1954, and December 31, 1953

Assets	1954	1953
Current Assets:		
Cash	\$ 36,243,060	\$ 23,668,323
Which Approximates Market	34,118,968	11,585,301
Notes and Accounts Receivable	53,032,241	41,482,219
Crude Oil and Refined Products at Cost, Deter-		
mined on the Last-in, First-out Basis, Lower		
Than Aggregate Market	40,284,064	43,865,935
Materials and Supplies at or Below Average Cost.	10,172,798	9,331,202
Total Current Assets	\$173,851,131	\$129,932,980
Investments and Advances at Cost, Less Reserves:		
Controlled Companies Not Consolidated	\$ 16,996,408	\$ 2,194,783
Other	15,695,009	26,433,628
	\$ 32,691,417	\$ 28,628,411
Property, Plant and Equipment, Substantially at		
Cost	\$709,540,825	\$639,110,576
Less: Reserves for Depreciation, Depletion, and		
Intangible Development Costs	440,297,798	392,454,976
	\$269,243,027	\$246,655,600
Prepaid and Deferred Charges	\$ 4,413,851	\$ 4,205,926
[Continued on page 233]	\$480,199,426	\$409,422,917

procedures which were being used in the various departments of the company for the appraisal of new capital investments. In view of the fact that the company's capital expenditures ran in the neighborhood of \$100 million a year, the president felt it was important for the company to have adequate means of measuring the relative desirability of alternative investment projects.

The report which was submitted by the two men late in 1954 is

1954	1953				
\$41,000,100	\$40.0 <del>2</del> 4.000				
\$41,683,189 \$4.28	\$40,874,666 \$4.20				
\$25,341,108	\$25,315,104				
\$2.60 \$100.042.648	\$2.60 \$84,967,792				
	\$41,683,189 \$4.28 \$25,341,108				

Liabilities and Stockholders' Equity		
Current Liabilities:		
Accounts Payable and Accrued Liabilities Accrued Taxes, Including Provision for Federal	\$ 47,423,527	\$ 37,960,455
Income Taxes	12,222,588	18,773,511
Long-term Debt Due Within One Year		5,000,000
Total Current Liabilities	\$ 59,646,115	\$ 61,733,966
Long-Term Debt:		
Thirty-year Sinking Fund 3% Debentures, Due		
November 1, 1984 (Redeemable \$4,000,000	4100 000 000	
Annually Commencing 1960)	\$100,000,000	\$ — 45,000,000
34% Notes	_	45,000,000
Payable \$450,000 Annually Commencing 1956.	7,500,000	7,500,000
Purchasing Obligations	633,233	884,259
	\$108,133,233	\$ 53,384,259
Deferred Federal Income Taxes	\$ 2,350,000	\$ 473,815
Reserves for Insurance and Annuities	\$ _	\$ 343,380
Stockholders' Equity:		
Capital Stock, Par Value \$5 Per Share:		
Authorized—12,000,000 Shares		
Outstanding—9,746,916 Shares in 1954 and 9,736,916 Shares in 1953		
(Notes 3 and 4)	\$ 48,734,580	\$ 48,684,580
Capital Surplus (Note 3)	57,236,462	57,045,962
Earned Surplus, Per Accompanying Statement	204,099,036	187,756,955
	\$310,070,078	\$293,487,497
	\$480,199,426	\$409,422,917

attached as Exhibit 3.1 In April, 1955, one session at the company's annual meeting of top management personnel was devoted to a discussion of the proposed new procedures. Certain of the charts and tables which were used for explanatory purposes in this discussion are shown in Tables 1 to 6, attached.

<sup>&</sup>lt;sup>1</sup> A few minor alterations have been made in the report to avoid disclosures of confidential information.

	Barrels Daily 1954 1953							
	1954	1953						
Net Crude Oil Production	125,520	118,896						
For Continental's Account	125,479	114,722						
By Continental for Others	835	_						
For Continental by Others	8,679	16,145						
Sales of Refined Products	155,418	145,348						

Statement of Consolidated Income and Earned Surplus
For the Years Ended December 31, 1954, and December 31, 1953

	1954	1953
Income:		
Gross operating income	\$500,125,113	\$476,841,887
Dividends, interest and other income	5,299,238	3,121,832
	\$505,424,351	\$479,963,719
Cost, Expenses and Taxes:		
Costs, operating and general expenses	\$374,833,916	\$358,859,062
Taxes, other than income taxes	11,483,595	10,673,679
Intangible development costs	37,282,664	28,536,764
Surrendered leases	7,174,653	4,868,072
Depletion	1,905,647	1,809,651
Depreciation and retirements	20,330,412	17,618,753
Interest and debt expense	2,030,275	1,823,072
Federal and state income taxes	8,700,000	14,900,000
	\$463,741,162	\$439,089,053
Net Income for Year Earned Surplus:	\$ 41,683,189	\$ 40,874,666
Balance at beginning of year	187,756,955	172,197,393
	\$229,440,144	\$213,072,059
Dividends paid (\$2.60 per share in each year)	25,341,108	25,315,104
	\$204,099,036	\$187,756,955

NOTE: Continental Oil Company is one of four or five major oil companies which charge all intangible drilling costs to income in the year incurred. Many other major oil companies follow the practice of capitalizing intangible drilling costs and amortizing a certain portion of them each year in proportion to crude oil produced.

#### EXHIBIT 3

#### Report to President

## Appraisal of New Capital Investments-Summary

- 1. Beginning July 1, 1955, we should use return on investment figures as the primary yardstick for evaluating new capital investments in place of the years to pay out figures which have been our primary guide in the past. Years to pay out figures should also be calculated but should be used only as measures of capital turnover.
- 2. Seven per cent per annum after taxes should be regarded as the rate of return necessary to cover our average, long-run cost of capital and to maintain our earnings per share at about their present level.
- Our stockholders expect continual improvements in their financial returns, and we should therefore seek to invest the majority of our capital funds in

situations where it will earn substantially more than 7% after taxes. Moreover, in accordance with universal financial practices, we should require higher rates of return on our money when the risks are high than when the risks are low.

It is recommended, therefore, that the *normally expected* level of return for the general run of investments in marketing and pipeline facilities should be about 10% or better; for refining facilities, 14% or better; and for development wells and petrochemical facilities, 18% or better. Projects showing lower rates of return should be undertaken only when there are very sound, nonfinancial justifications for them.

4. Beginning July 1, 1955, all return on investment figures should be calculated by the *financial method;* that is, on the basis of the investment actually outstanding from time to time over the life of the project rather than on the basis of the *original* or *average* investments which we are now using.

The chief advantage of the financial method is that it differentiates between investments which generate their income early and investments which generate their income late. In addition, adoption of the financial method would serve to place procedures for calculating returns on a uniform basis in all departments of the company.

- 5. The financial method of calculating returns should be applied in the various departments of the company in accordance with the general methods illustrated in Exhibits 6 to 9 of this memorandum.
- 6. In order to insure that proper consideration will be given to the possibility of selling some of our existing service stations and replacing them with new stations elsewhere, it is recommended that any funds realized from such sales (after deducting applicable capital gains taxes) should be made available automatically as an addition to the service station building budget of the division arranging the sale.
- 7. Wherever it is feasible to do so, accounting and statistical procedures should be developed which will make it possible to compare the actual earnings of new investments against those projected at the time the investment is made. These comparisons should be summarized by divisions, regions, and functional areas and reported to top management on a continuing basis.
- 8. If the recommendations contained in this memorandum are accepted, a Working Committee on Investment Analysis should be established. This group should develop the detailed plans and instructions for implementing the new procedures in the various departments, visit the region and division offices to discuss the new methods with the field personnel, and have the responsibility for establishing during the coming year the follow-up procedures outlined in recommendation 7.

Signed	:															
		•														

#### **EXHIBIT 4**

## Appraisal of New Capital Investments-February 9, 1955

Continental is currently investing new money in the oil business at the rate of about \$100 million per annum, or \$385,000 each working day. The management judgment which is exercised in the making of these investments has a very significant bearing on current and future earnings per share and a profound influence on the long-term growth and development of the company. It is, therefore, of utmost importance that we develop the *best possible yardsticks* for comparing one investment opportunity against another and for evaluating the return which particular projects will earn on the stockholder's dollar.

The purpose of this memorandum is to present a series of recommendations which are designed: (a) to provide a more accurate means of discriminating among new investment opportunities than we now have, (b) to establish reasonable uniformity among the procedures used for the appraisal of new investments in different departments of the company, and (c) to provide a simple means of determining how particular projects will affect our future

earnings per share.

The memorandum is divided into three parts. Part I contains the recommendations and a brief explanation of the reasons for them. Part II contains various examples and explanatory notes. Part III contains detailed instructions for the use of the procedures recommended herein.\*

## I. Recommendations

# A. Use of Return on Investment as Primary Yardstick:

For the past several years, it has been our practice to measure new capital investments by means of two figures: (a) years to pay out, and (b) return on investment. Ordinarily, however, emphasis has been placed on the years to pay out figure and relatively little attention has been given to the rate of return.

Beginning July 1, 1955, it is recommended that we reverse the order of significance attached to these two figures and use return on investment as the primary yardstick for evaluating new capital investments. We should continue to calculate years to pay out figures but should use them only as measures of capital turnover and not as measures of the relative value of particular investments to the company.

The reasons for de-emphasizing years to pay out figures in the analysis of

new investments may be summarized as follows:

1. Years to pay out figures do not provide an adequate means of discriminating among new investment opportunities because they indicate only the length of time necessary to recover the original capital outlay. Actually, the true worth of an investment depends upon how long it will continue to produce income *after* the original outlay has been recovered. As a result, years to pay out figures are reliable measures of the relative worth of alternative investments only when the income producing life of all projects under consideration is about the same.

<sup>\*</sup> This part of the memorandum has not been included in the case.

When the income producing life of two or more projects is different, as is often the case in Continental's situation, comparisons by means of years to pay out figures may be grossly misleading. As shown in Schedule 1, for example, it is entirely possible for a project with a seven-year payout and a long life to yield a far better return on the stockholder's dollar than a project with a five-year payout and a short life.

2. Years to pay out figures are also deficient as a yardstick for measuring new capital investments because they give no clear indication of whether or not the earnings from a particular project will be sufficient to cover our long-run cost of capital and to maintain our earnings per share at their present level. Under certain circumstances, a project with a five-year payout could have the effect of reducing earnings per share, whereas a project with a ten-year payout might have the effect of increasing earnings per share.

Return on investment figures provide a much better yardstick for measuring new investments because they do not have the two weaknesses noted above. Such figures give full recognition to the income produced *after* the original capital outlay has been recovered and make it possible to compare the earnings from a project against our long-run cost of capital and the minimum return necessary to maintain our earnings per share.

# B. Rate of Return Necessary to Cover Cost of Capital:

On the basis of past experience, it appears that Continental's average, long-run cost of capital is somewhere in the neighborhood of 7% per annum after taxes. A return of 7% after taxes may therefore be regarded as the "break-even point" for new capital investments. Projects earning a lower rate of return will have the general effect of reducing our present earnings per share, and it is recommended that such ventures be undertaken only when there are very strong nonfinancial or operational reasons for them.

Average cost of capital. The 7% figure for Continental's average cost of capital is derived from the following considerations:

- 1. The funds which Continental has available for investment are drawn from three principal sources: long-term debt, equity capital obtained from the sale of common stock, and retained earnings. Over the long run, it may be assumed that about 25% of our funds for expansion will come from long-term debt and about 75% from the sale of common stock or retained earnings.
- 2. Continental's credit is such that the long-term debt money can probably be secured at an average rate of somewhere around 3½%. Interest charges are a deductible expense for tax purposes, and hence the investment funds obtained from long-term debt may be considered to have an after tax cost of about 1¾% (assumes a tax rate of 50%).
- 3. The "cost" of equity capital obtained from the sale of common stock is the rate of return which must be earned on the new money in order to avoid a dilution in our earnings per share. This required rate of return depends upon the relationship between the market price of our stock at the time the sale is made and our current earnings per share. Ordinarily, our price-

earnings ratio is such that the required rate of return on new equity money is around 7-9% after taxes.

As may be seen from Schedule 2, for example, if in 1954 we had obtained \$100 million from the sale of 1,667,000 shares of new common stock at a price of \$60,° the new funds would have had to be invested in such a manner as to earn \$7.1 million or 7.1% per annum after taxes in order to maintain our earnings per share at their 1954 level.

- 4. Retained earnings are similar to equity capital, except that they represent an *involuntary* rather than a *voluntary* new investment by stockholders. It may therefore be assumed that they also have an average "cost" of about 7-9% after taxes. Alternatively, it might be said that our stockholders expect each \$1 of earnings retained by management to be put to work in such a way that ultimately the market price of Continental's stock will increase at least \$1. All other things being equal, however, this will not happen unless the money is so invested that it earns a return at least equal to the present ratio of our earnings to the market price of our stock, or about 7-9%.
- 5. If long-term debt money has an after tax cost of 14% and equity capital and retained earnings an after tax cost of 7-9%, we may assume that the weighted average cost of the funds Continental has available for new investments is in the neighborhood of 7%. This average assumes, as noted above, that we will obtain about 25% of our money from long-term debt and the remainder from equity stock and retained earnings.

The 7% figure should be used as a bench mark in evaluating all new investments, regardless of whether the particular project at hand is being financed by borrowings, the sale of new stock, retained earnings, or some mixture of the three. ° To the extent that we use our low-cost debt money for one project, we will not have it available for the next project, because we probably cannot expect to draw more than about 25% of our funds for new ventures from the debt source. The only sound procedure, therefore, is to consider that all new projects are financed from a *common pool* of investment funds and that the monies flowing into that pool have a long-run, average cost of about 7% after taxes.

# C. Normally Expected Level of Return on New Investments:

If Continental is to grow and expand on a profitable basis, it is, of course, necessary that our new investments earn substantially more than the 7% minimum necessary to cover our long-run average cost of capital. Moreover, in keeping with universal financial practices, we should require higher rates of return on our money when the risks are high than we do when the risks are low.

It is recommended, therefore, that the *normally expected* level of return for the general run of investments in marketing and pipeline \*\*\* facilities should be

<sup>\*</sup> The price range for Continental stock in 1954 was between \$52 and \$75 per share.

<sup>\*\*</sup> A somewhat different standard may be appropriate in the case of investments *in* or *by* subsidiary or affiliated companies which have a very low ratio of equity to debt capital.

<sup>\*\*</sup> For this purpose, the pipeline calculations should include pipeline earnings *plus* transportation savings to Continental.

about 10% or better; for refining facilities, 14% or better; and for development

wells and petrochemical facilities, 18% or better.\*

From time to time, there will be sound operational reasons for undertaking projects which offer lower rates of return. It should be recognized, however, that such ventures are subnormal in terms of the contribution they will make to the financial growth and development of the company, and we should make certain that they are well-warranted by the circumstances at hand. As noted earlier, particularly strong justification should be required for any project which shows a return below the "break-even level" of 7% after taxes.

# D. Need for Uniform Procedures in All Departments:

In order that the top management group may have the same yardstick for the measurement of investment opportunities in all departments of the company, it is necessary that all departments follow the same general procedures in the calculation of their return on investment figures. Some of the discrepancies in our existing practices and recommendations for correction of them are outlined below:

1. At the present time, return on investment figures in the Marketing Department are based on *average investments*, whereas in all other departments of the company they are based on *original investments*. In other words, we are now using two completely different yardsticks to measure our capital investments and the figures obtained by one procedure can be as much as twice as great as those obtained by the other.

Both procedures are commonly used in the business world, but there is no justification, theoretical or practical, for using a mixture of the two procedures in the same company. The recommended solution is a compromise between the two methods, as outlined in paragraph E below.

2. The income from marketing investments is now being estimated on the basis of fairly long-term *average spreads* between tank wagon and tank car prices. The income from refining investments, however, is usually based on the *current spread* between crude oil and tank car prices at the time the calculation is made.

As a result, the two procedures are not consistent, and the refining payouts may sometimes incorporate part of the marketing "profits" or may sometimes fail to take all of the profits properly attributable to them. Moreover, since the refining margin fluctuates so widely from month to month, a project could look good or bad under the existing procedure depending on the particular month in which it was calculated.

It is recommended, therefore, that refinery returns and payouts be calculated on the basis of average tank car prices in the same general

manner as that used in the marketing calculations.

3. The procedures used in the Manufacturing and Pipeline Departments are designed to reflect any financial advantages secured from fast tax write-offs. The procedures used in the Production Department, on the other hand, do not reflect fully the tax deductions gained from the expensing of intangible drilling costs in the first year of development.

<sup>\*</sup> These suggested standards may require some adjustment after we have had a little experience with the new procedures.

In order that our return on investment and payout figures may be as realistic as possible, it is recommended that procedures in all departments be designed to reflect (in so far as practical) the actual tax status of each investment.

#### E. Use of Financial Method to Calculate Returns:

It is recommended that beginning July 1, 1955, all return on investment figures be calculated by the *financial* (or discounted cash flow) method. Under this procedure, which is universally used by banks and other lending institutions, the return is computed on the investment actually outstanding from time to time over the life of the venture rather than on the original or average investments. The financial method is slightly more complicated than the procedures we are now using, but it offers two major advantages:

- 1. The financial method gives the true rate of return on the investment. Both the original and average investment methods which we are now using provide only an approximation of the true rate of return. The original investment method usually understates the return, and the average investment method usually overstates the return. Moreover, the amount of over- or understatement is not always uniform, so there is no easy way of making mental allowance for it. Depending on the circumstances, the true rate of return could be as much as double or as little as half that calculated by our existing procedures (see examples in Schedules 3 to 5).
- 2. The financial method makes due allowance for differences in the time at which investments generate their income. In other words, it discriminates among investments that have (a) a low initial income which gradually increases, (b) a high initial income which gradually declines, and (c) a uniform income throughout their lives. Our existing procedures, on the other hand, make no allowance for the time which the income is received and give exactly the same results for each of the three cases (see examples in Schedules 3 to 5).

[Paragraphs F, G, and H discuss how the financial method would be applied in Continental's particular situation to new investments in service stations, producing wells, and various other properties. In the interests of brevity, they have been omitted from the case.]

# 1. Follow-up Procedures:

Wherever it is feasible to do so, accounting and statistical procedures should be developed which will make it possible to compare the actual earnings on new investments against those projected at the time the investments are made. These comparisons should be summarized by divisions, regions, and functional areas, and reported to top management on a regular basis. Continuing comparisons of this type will provide one very important means by which management at all levels can gradually improve its judgment in forecasting returns from new capital outlays.

# J. Working Committee on Investment Analysis:

If the foregoing recommendations are approved, it is suggested that a Working Committee on Investment Analysis be established. This group, which should include a representative from each of the major operating departments, should be given three assignments:

- 1. The group should develop the detailed plans for implementing the above procedures in each department. These plans, after approval by the Controller, should be incorporated in Controller's Bulletins and issued to the region and division offices by June 1, 1955.
- 2. One or more members of the group should visit each of the division and region offices during June to explain the new procedures and to make sure that both the mechanics and theory of the changes are thoroughly understood and accepted by the field personnel.
- 3. On the basis of the discussions with the field personnel in June, the Working Committee on Investment Analysis should make further improvements in the details of the procedures. In addition, the group should have the responsibility for establishing during the coming year the procedures for checking results against estimates as outlined in paragraph I above.

Signed:														

# II. Examples and Explanatory Notes

#### SCHEDULE 1

Appraisal of New Capital Investments Comparison of Two Investments with Different Lengths of Life

	Project A	Project B
Original investment	\$50,000	\$50,000
Estimated life	8 years	25 years
Annual income, after taxes before depreciation	$$10,000$ $6,250$ $\hline{$3,750}$	\$ 7,000 2,000 \$ 5,000
Years to pay out	5.0 years	7.1 years
Return on average investment	15%	20%

NOTE: In this situation, Project B has the *longer payout* period, but yields a *higher return* on the stockholder's investment than does Project A.

#### **SCHEDULE 2**

# Appraisal of New Capital Investments Illustration of Cost of Equity Capital

The following calculations demonstrate that if Continental had obtained \$100 million from the sale of 1,667,000 shares of new common stock in 1954 at a price of \$60 per share, the money would have had to be invested in such a manner as to earn \$7.1 million or 7.1% per annum after taxes in order to maintain our earnings per share at their 1954 level.

	At Present	After Stock Sale
Common shares outstanding 1954 earnings after taxes Earnings required on new money after taxes Net available for common stock Earnings per share	\$41.7 million ————————————————————————————————————	11,414,000 \$41.7 million \$ 7.1 million \$48.8 million \$4.28

Return required on new money  $\frac{\$7.1 \text{ million}}{\$100 \text{ million}} = 7.1\% \text{ per annum}$ 

Ratio of per share earnings to stock price  $\frac{$4.28}{$60} = 7.1\%$ 

### SCHEDULE 3

# Appraisal of New Capital Investments Comparison of Methods: Investments with Uniform Income

Ass	sumptions:									
<i>I</i> <b>I</b>	Annual incom Life of invest Γotal income	stment e, after taxes befo tment ter return of origin	re depreciation			\$ 56,502 \$ 10,000 10 years \$100,000 \$ 43,498				
1. Ret	<u> </u>									
	Deduct: depr	e, after taxes befo eciation (\$56,502	$\div$ 10 years) .			\$ 10,000 5,650				
	Annual inco	ome after taxes and	d depreciation .			\$ 4,350				
I	Return on inv	estment		$\frac{$4,3}{$56,5}$		7.7%				
2. Ret	2. Return Based on Average Investment:									
	Deduct: depr	e, after taxes befo eciation (\$56,502 ome after taxes and	$\div$ 10 years)			$\begin{array}{r} \$ \ 10,000 \\ 5,650 \\ \hline \$ \ 4,350 \end{array}$				
1	Return on inv	estment		$\dots \frac{\$ \ 4,3}{\$28,2}$		15.4%				
3. Rei	turn Calculat	ed by Financial M	Tethod:			12%				
Yea	ars	Income	Discount Factor—12%	Prese Valt						
1st to	10th	\$10,000	5.6502	\$56,50	2 (equals in	vestment)				
Ve	rification of 1	2% Return:								
Year	Income	Interest at 12	% Return o	of Principal	Balance of at Beginnin					
1st 2nd	\$ 10,000 10,000	\$ 6,780 6,394		,220 ,606	\$56,5 53,5					
3rd 4th	10,000 $10,000$	5,961 5,476		,039 ,524	49,0 45,0					
5th	10,000	4,934		5,066	41,					
6th	10,000	4,326		,674	36,0					
7th 8th	10,000	3,645		3,355	30,3					
9th	10,000 10,000	2,882 2,028		7,118 7,972	24,0 16,9					
10th	10,000	1,072		,928		928				
	\$100,000	\$43,498	\$56	5,502		0				

### **SCHEDULE 4**

Appraisal of New Capital Investments
Comparison of Methods: Investments with Declining Income

	Annual inc	ivestment ome, after	taxes before deprec	iation	\$ 56,502 \$ 15,000 1st to 3rd yrs. \$ 10,000 4th to 7th yrs. \$ 5,000 8th to 10th yrs.					
	Life of investment 10 years Total income \$100,000 Total profit after return of original investment \$43,498									
1.	Return Based	on Origin	al Investment:							
	Average ar deprecia Deduct: de	nual incon tion preciation	ne, after taxes before, $(\$56,\!502 \div 10 \text{ yea})$	rs)	$\begin{array}{c} \$ \ 10,000 \\ \underline{5,650} \\ \$ \ 4,350 \end{array}$					
	Return on investment									
2.	deprecia Deduct: de Annual i	mual incontion  epreciation  ncome afte	(\$56,502 ÷ 10 ye r taxes and deprecia	ars)	\$ 10,000 5,650 \$ 4,350					
	Return on i	investment		$\frac{4,350}{28,251} =$	15.4%					
3.	Return Calcu	lated by Fi	inancial Method:		15.5%					
	Years	Income	$Discount \\ Factor-15.5\%$	Present Value						
	1st to 3rd 4th to 7th 8th to 10th	\$15,000 10,000 5,000	2.2644 1.8343 .8258	\$33,966 18,343 4,129						
	T7 10 11	. 1 ~ ~ ~ D - 1		\$56,438 (	equals investment)					
Yea	Verification of ir Inco		urn: nterest at 15,5%	Return of Principal	Balance of Principal at Beginning of Year					
1s 2r 3r 4t	st \$ 15,0 nd 15,0 rd 15,0 h 10,0	000 000 000 000	\$ 8,758 7,841 6,681 5,391	\$ 6,242 7,559 8,319 4,609 5,323	\$56,502 50,260 43,101 34,782 30,173					
5t 6t	,		4,677 $3,852$	6,148	24,850					
7t 8t	h 10,0		2,899 1,798	7,101 3,202	18,702 11,601					

8,399

4,701

430\*

1,302

\$43,928

729

3,698 4,271

\$56,072

5,000

5,000

\$100,000

9th

10th

<sup>\*</sup> Does not come to zero because of rounding of numbers.

#### SCHEDULE 5

# Appraisal of New Capital Investments Comparison of Methods: Investments with Increasing Income

	Assump Origi	nal investmer		\$ 56,502					
			er taxes before depr		\$ 6,000 1st to 3rd yrs. \$ 10,000 4th to 7th yrs. \$ 14,000 8th to 10th yrs.				
	Total	income	turn of original inve		10 years \$100,000 \$ 43,498				
1.	Return	Based on Orig	ginal Investment:						
	Average annual income, after taxes before								
	Dedu	oreciation	ion ( $$56,502 \div 10$	voore)	\$ 10,000 5,650				
		-	fter taxes and depre	•	\$ 4,350				
			•	\$ 4.350					
	Retur	n on investme	ent	$\frac{$56,502}{}$	7.7%				
2.	Return	Based on Ave	rage Investment:						
			come, after taxes bef						
	dep	reciation	\$ 10,000						
			years)	5,650					
	Anı	nual income a	after taxes and depr		\$ 4,350				
	Retur	n on investme	nt	$\frac{\$ 4,350}{\$28,251} =$	15.4%				
3.	Return (	Calculated by	Financial Method:		10+%				
			Discount	Present					
	Years	Income	Factor—10%	Value					
	1st to 3r	_ ′ ′		\$14,921					
	4th to 7t			23,816					
	8th to 10	)th 14,000	1.2761	17,866	1				
	Verificat	ion of 10+%.	Return:	\$50,003 (6	equals investment)				
		, ,		Return of	Balance of Principal				
Yea	ir	Income	Interest at 10%	Principal	at Beginning of Year				
1s	_	6,000	\$ 5,650	\$ 350	\$56,502				
2n		6,000	5,615	385	56,152				
3r 4t		6,000	5,578	422	55,767				
5t		10,000 10,000	5,535 5,088	4,465 $4,912$	55,345 50,880				
6t	_	10,000	4,597	5,403	45,968				
7t		10,000	4,057	5,943	40,565				
8t		14,000	3,462	10,538	34,622				
9t.		14,000	2,408	11,592	24,084				
10t	-	14,000	1,249	12,751	12,492				
		3100,000	\$43,239	\$56,761	259*				

<sup>\*</sup> Does not come to zero because of rounding of numbers.

#### TABLE 1

# Sources and Costs of Funds for Capital Investment

Sources of Funds for Capital Investment:

	Long-term borrowing		25%
2.	Sale of common stock	1	75%
3.	Retained earnings	}	10/0

#### Cost of Borrowed Money:

3%-4% before taxes 1½%-2% after taxes

# Return Required on Money Obtained from Sale of Common Stock:

Assume \$100 million obtained from sale of new common stock at price of \$60 per share.

Number of shares sold 
$$\frac{\$100,000,000}{\$60} = 1,667,000 \text{ shares}$$

Required earnings to break even

$$4.28 \text{ per share} \times 1,667,000 = 7,100,000$$

Required rate of return on new investments

$$\frac{\$7,100,000}{\$100,000,000} = 7.1\%$$
 per annum after taxes

### Return Required on Retained Earnings:

$$\frac{1954 \text{ Earnings per Share}}{\text{Recent Market Prices Per Share}} = \% \text{ Return}$$

$$\text{Pure} \qquad \frac{\$7.09}{\$80} \qquad = 8.8\%$$

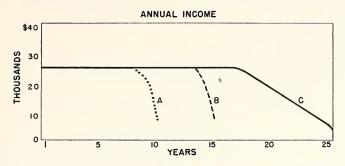
$$\text{Shell} \qquad \frac{\$4.40}{\$62} \qquad = 7.1$$

$$\text{Socony} \qquad \frac{\$5.15}{\$54} \qquad = 9.6$$

1954 Earnings per Share

Sun 
$$\frac{\$4.17}{\$73} = 5.8$$
  
Ohio Oil  $\frac{\$5.82}{\$71} = 8.2$ 

TABLE 2
Payout Periods as a Measure of New Investments



L	Project A	Project B	Project C
Original investment  Life of investment  Payout period $\frac{\$125,000}{\$25,000} =$ Return on investment	\$125,000 10 years 5 years	\$125,000 15 years 5 years	\$125,000 25 years 5 years 20%

TABLE 3

Methods of Calculating Return on Investment Figures

#### 1. Original Investment Method:

Divide average annual income after taxes and depreciation by the total original capital outlay.

Used by our Production, Manufacturing, Petrochemical and Pipe Line Departments.

#### 2. Average Investment Method:

Divide average annual income after taxes and depreciation by *half* the original investment or by whatever figure represents the midpoint between the original cost and the residual value of the property at the end of its life.

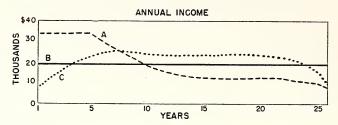
Used by our Marketing Department.

#### 3. Financial Method:

Calculate return on the basis of the investment actually outstanding from time to time over the life of the project.

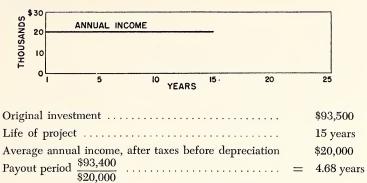
Used by our Financial Department, our banks, and other financial institutions.

**TABLE 4**Comparisons of Return on Investment Calculations



	Project A	Project B	Project C
Original investment Life of investment Total income, after taxes before depreciation Average annual income, after taxes be-	\$125,000 25 years \$500,000	\$125,000 25 years \$500,000	\$125,000 25 years \$500,000
fore depreciation	\$ 20,000 \$ 5,000	\$ 20,000 \$ 5,000	\$ 20,000 \$ 5,000
Annual income after taxes and depreciation	\$ 15,000	\$ 15,000	\$ 15,000
Return on original investment $$15,000$ $$125,000$	12%	12%	12%
Return on average investment \$15,000 \$62,500	24%	24%	24%
Return by financial method	24%	15.5%	13%

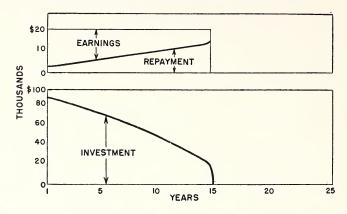
TABLE 5
Application of Financial Method to Investments with Uniform Income



### DISCOUNT TABLE

		Percentage Return									
Life of Project	18%	19%	20%	21%	22%						
l year	.847	.840	.833	.826	.820						
2 years	1.566	1.547	1.528	1.509	1.492						
3 years	2.174	2.140	2.106	2.074	2.042						
4 years	2.690	2.639	2.589	2.540	2.494						
5 years	3.127	3.058	2.991	2.926	2.864						
6 years	3.498	3.410	3.326	3.245	3.167						
7 years	3.812	3.706	3.605	3.508	3.416						
8 years	4.078	3.954	3.837	3.726	3.619						
9 years	4.301	4.163	4.031	3.905	3.786						
10 years	4.490	4.339	4.192	4.066	3.923						
11 years	4.650	4.487	4.327	4.189	4.035						
12 years	4.786	4.611	4.439	4.290	4.127						
13 years	4.901	4.715	4.533	4.374	4.203						
14 years	4.998	4.802	4.611	4.444	4.265						
15 years	5.081	4.876	4.675	4.501	4.315						

TABLE 6
Illustration of Return Calculated by Financial Method



Year	Annual Income	Repayment of Investment	Available for Earnings	Investment Outstanding	Return on Investment
1	\$ 20,000	\$ 1,298	\$ 18,702	\$93,510	20%
2	20,000	1,558	18,442	92,212	20
3	20,000	1,869	18,131	90,654	20
4	20,000	2,243	17,757	88,785	20
5	20,000	2,692	17,308	86,542	20
6	20,000	3,230	16,770	83,850	20
7	20,000	3,876	16,124	80,620	20
8	20,000	4,651	15,349	76,744	20
9	20,000	5,581	14,419	72,093	20
10	20,000	6,698	13,302	66,512	20
11	20,000	8,037	11,963	59,814	20
12	20,000	9,645	10,355	51,777	20
13	20,000	11,574	8,426	42,132	20
14	20,000	13,888	6,112	30,558	20
15	20,000	16,670	3,330	16,670	20
	\$300,000	\$93,510	\$206,490	0	

#### VELOX OIL COMPANY

# Capital Investments

The Velox case involves, among other things, the problem of appraising the results of past capital expenditures as an aid to making future decisions in that area. It requires careful analysis of figure information to insure that the decision is based on consideration of relevant data. Questions of incremental costs and revenues are raised as they relate to capital investments at different stages of the production and distribution processes of an integrated oil company.

#### Introduction

In 1948 the Velox Oil Company of California began a program of investment in the modernization and expansion of its gasoline marketing facilities. About 90% of the outlay was for building and rebuilding gasoline service stations. From an initial commitment of \$1.9 million in 1948, the annual expenditure on the program grew to just over \$4.3 million in 1951, and approximately this amount was spent each year through 1954. Exhibit 1 shows the annual amount spent on the program and the number of new, rebuilt and leased stations added each year. The leased stations were built by Velox, sold, and leased back. Early in December, 1954, after almost seven years of investment in the modernization and expansion program, the company's president was considering whether to recommend to the board of directors in his proposed 1955 capital budget the continuance of investment in marketing facilities at the rate of just under \$4.5 million a year.

# **Present Marketing Program**

The Velox Oil Company owned and operated several refineries at points throughout its West Coast marketing area and distributed the output of these refineries through three main channels which were designated (1) "general office," (2) "branded jobbers," and (3) "bulk plant-service station." To supplement the output of its

	I	EXHIBIT	1		
Data on	Marketing	Facilities	for	Years	1948–1954

Year	Total Annual New Investment in Marketing Facilities— in Millions	Number of Service Stations Added During the Year New, Rebuilt, or Leased	Old Stations at the End of the Year	Total Stations at the End of the Year
1948	1.9	9	338	347
19 <b>4</b> 9	2.8	19	329	357
1950	3.6	84	302	414
1951	4.3	80	286	478
1952	4.4	107	268	567
1953	4.4	90	249	638
1954 (est.)	4.2	109	224	72 <mark>2</mark>

NOTE: When an old station is rebuilt, or when it goes out of business, it is subtracted from the list of old stations at the end of the year.

SOURCE: Company records.

own refineries, the company bought gasoline from other companies for distribution through the bulk plant-service station channel. In 1953, the last complete year on record, the company sold 450 million gallons through the general office channel, 175 million gallons through branded jobbers, and 235 million gallons through the bulk plant-service station channel (see Exhibit 2). Motor gasoline made up 38% of the general office volume, 59% of the branded jobber volume, and 86% of the volume handled by the bulk plant-service station channel.

Sales through the general office channel included large lot sales of unbranded gasoline, oil, and distillates, sometimes by yearly contract, to customers who picked up the refinery output in pipelines, tankers, or tank cars at or near the refinery gate. The price received depended largely on the conditions of supply and demand at the refinery location at the time of purchase agreement. Distribution through the general office channel involved practically no investment in marketing facilities and very little selling expense.

All the gasoline distributed through the jobber and bulk plantservice station channels was sold under the Velox brand name. Velox's marketing investment underlying sales to the jobbers con-

sisted only of a share of the company's terminal facilities since the jobbers provided their own bulk plants and other retail outlets. Selling expense per gallon in the jobber channel was a small amount arrived at through allocations from total marketing expense made by sales division managers. On the other hand, in the bulk plant-service station channel most of the gasoline moved through company-owned facilities. In this channel, the gasoline was carried first to a terminal, and then to a bulk plant from which it was distributed to companyowned service stations (43% of the gallonage), to independent service stations using the Velox brand name (33%), and direct to farmers, commercial users, and fleet operators (24%). Almost all the bulk plants were owned by Velox, but only a small number were operated by company employees; the majority were run by agents who were paid a commission for each gallon they handled. Most of the stations built since 1948 were equipped with sufficient storage so that they could be supplied directly from terminals. In such cases, where the bulk plant was by-passed, an override commission of about one-half cent per gallon was still paid to the bulk plant agent.

Most of Velox's investment in marketing facilities was in the bulk plant-service station channel, and in that channel service stations accounted for the largest part. The 1953 budget commitments of \$4.4 million were divided roughly as follows: 90% to service stations, 4% to bulk plant and terminal facilities used to supply the bulk plant-service station channel, 1% to terminals used in the jobber channel, and 5% to miscellaneous small projects mostly concerned with administrative facilities. At the end of 1953 the net investment (cost less reserve for depreciation) stood at \$17.1 million in the bulk plant-service station channel, including about \$5.1 million in service station sites, \$11.4 million in service stations, and \$.6 million in bulk plants and terminals supplying the bulk plant-service station channel. The jobber channel was supported by a net investment of about \$.2 million.

The manufacturing (refinery) investment supporting each marketing channel was difficult to segregate, since each refinery's output was distributed through all three channels. An allocation of manufacturing investment to the three channels on the basis of volume would not be realistic, since high value products (motor gasoline) required more refinery facilities than the low value products (fuel

EXHIBIT 2

Sales Volume and Net Income Before Taxes for the Three Marketing Channels †

Voar	Bulk	8ulk Plant-Service Station Channel	Station	I	Branded Jobber Channel		Ü	General Office Channel	
	Volume	Income *	Income * Per Gal.	Volume	Income *	Income * Per Gal.	Volume	Income	Income Per Gal.
	192	1.88	8600.	136	1.46	.0108	297	2.59	7800.
	205	1.67	0800.	148	1.39	.0095	323	2.66	.0082
	215	1.92	9800.	162	1.40	9800.	387	3.15	.0081
	223	2.68	.0116	162	1.38	.0082	393	2.62	9900.
	235	3.16	.0134	175	1.45	.0082	450	3.50	.0078

† Volume in millions of gallons; income in millions of dollars.

\* Income from the sales of tires, batteries and accessories in the bulk plant-service station and branded jobber channels was nil in 1949 and rose to between 3% and 4% of total income in 1953.

SOURCE: Company records.

oil or distillates), and the bulk plant-service station channel distributed a higher proportion of high value products than either of the other two channels. A rough approximation could be obtained, however, by allocating the \$19.2 million total net manufacturing investment at the end of 1953 according to the value of products distributed during the year. This allocation indicated that each gallon of refinery output distributed through the general office channel in 1953 was supported by \$.0211 of refinery investment, each gallon distributed through the jobber channel by \$.0217, and each gallon distributed through the bulk plant-service station channel by \$.0251 of investment. By this system \$9.5 million was allocated to the general office channel, \$3.8 million to the branded jobber channel, and \$5.9 million to the bulk plant-service station channel.

# Formation of Capital Budget

The proposed budget for the marketing department was an accumulation of projects, individually approved by regional managers and each supported by projected income estimates and pay-back calculations. The maximum pay-back period acceptable to the company was nine years. In terms of return on average investment this was equal to about 15% after taxes and after depreciation, based on a 25-year life. This figure was designed to provide incremental income over the 7% rate which management estimated as the company's cost of capital over the long run.

The estimated return on a proposed gasoline station project, either new or rebuilt, was based on an estimated "normal" volume which that station could be expected to achieve and on an approximate per gallon market spread (see below). The calculation of each proposed station's "normal" volume was based on a combination of factors such as traffic, location, and frontage on the street or highway. The management thought that it would usually take a station five years to achieve its normal volume, starting at about 25% of normal the first year, increasing to about 40%, 60%, 75%, and 100% of normal during the second, third, fourth, and fifth years. On this basis, the return on investment calculations used a volume figure of 60% of normal for each of the first five years, and normal volume there-

<sup>&</sup>lt;sup>1</sup> Since land was not depreciable, depreciation was based on about 70% of the original investment.

after for the life of the station, which was estimated to be twenty-five years.

The market spread or gross margin used in calculating the estimated income on each service station project was calculated for each locality in Velox's marketing area; it was the difference between the average selling price and the average tank car price as recorded over the past two years. The tank car price was the price in each locality at which independent bulk plants bought their gasoline.

When the marketing budget was submitted to the board of directors for approval, the individual investment projects were organized into classes of projects such as service station sites, service station construction, bulk plant construction, etc. After the board's approval of the total for each class, each of the regional managers was allocated an amount of money to be spent on the various classes of projects; within this amount the regional managers could approve any station whose projected pay-back was eight years or less. Stations whose pay-back periods were over eight years could be recommended by the regional manager, but required specific approval by either the executive management group or by the marketing vicepresident to whom the regional managers reported; such stations, if approved, were then included in the regional manager's budget. These exceptions were permitted if there were other overriding reasons for going ahead with a project. For instance, a new gasoline station with a nine-year pay-back might be approved if its strategic location or elaborate design were believed to provide desirable promotional benefits beyond those which would accrue to the particular station involved.

#### Characteristics of the Gasoline Market

In the process of expanding the bulk plant-service station channel certain characteristics of the gasoline market emerged. It became clear that accurate predictions of service station volume were difficult to make since many unpredictable circumstances could cause a poor showing in gasoline sales by a service station. For example, one station was built next to a new housing development with only one competitive station in the area. After a year of satisfactory sales two other stations were built by competitors within a block of the Velox location, and thereafter Velox's station sold only about two-

thirds of its predicted volume. Other instances occurred in which in-town stations suffered from the population movement to the suburbs. This was a continuing problem, not easily solved. On one occasion in order to take advantage of this shift, the company traded an in-town station for two sites on the edge of town, and though this increased the total gasoline sales in the area, neither of the new stations sold as much gasoline as had the one in-town station.

The opinion was expressed by a member of Velox's marketing department that different returns should be required of different parts of the oil business. A good oil well might pay off in a few months, a refinery in a couple of years, but it took many years to develop a market for a company's brand of gasoline. In addition some Velox executives thought that, although the general office channel might pay a higher return on invested capital than the service station channel, the company would be in a vulnerable position if sales were made only through the general office channel. This channel, they pointed out, was very profitable when gasoline was in short supply, but in periods of oversupply, prices could fall to unprofitable levels. Customers were thought to be least loyal in the general office channel, and most loyal in the service station channel. One man compared the service station channel with an investment in bonds, the branded jobber with preferred stock, and the general office channel with a speculative investment in common stock.

#### Gasoline Station Sales Volume

Each year in October and November, the marketing department compiled the records of sales volume for the preceding twelve months through September 30 for each of the company's service stations, and compared them with the normal volume for each station as previously defined. A condensation of the reports for the past four years covering service stations built since 1948 appears in Exhibit 3.

The uncondensed reports of station sales volume were summarized and interpreted by the controller and by members of the marketing department for use by the company's president. The controller's comments on the 1954 sales results were as follows:

Since it is generally conceded that it takes a few years for a new station to attain its potential, it was thought advisable to examine the volume records of

stations that had been open two or more years. This study revealed that of the 128 new stations which had been in operation two or more full years as of September 30, 1954, 65 stations, or slightly over one-half of the total, sold less during the last twelve months than during the preceding twelve months.

As of September 30, 1954, 84 rebuilt stations had been in operation two or more full years. Here the record was worse because 49 stations, or 58%, sold

less in the last twelve months than in the preceding twelve months.

#### **EXHIBIT 3**

# Gasoline Station Sales Records During the Five 12-Month Periods Ending September 30, 1950–1954

A. Average Sales per Station per Year in Thousands of Gallons

Station Groups *	1950	1951	1952	1953	1954
1949 1950 1951 1952 1953	243	245 188	245 197 183	232 188 179 150	220 188 176 149 146
Total **	4,411	16,266	27,883	40,764	50,187
	B. Average P	er Cent of "N	orma <b>l" ***</b> Vo	lume	
1949 1950 1951 1952 1953	89.6	91.3 77.5	95.6 83.4 84.6	89.4 80.2 81.8 72.8	82.9 80.2 81.0 72.4 74.0

<sup>\*</sup> Those stations built in the 12 months preceding September 30 of the stated years 1949-1953. Does not include stations sold and leased back.

SOURCE: Company records.

#### EXHIBIT 4

# Average Volume per Service Station Average Number of Gallons per Month Sold During the 12 Months Preceding September 30, 1954

Service stations under one year old on September 30, 1954	12,300
Service stations one to two years old on September 30, 1954	12,200
Service stations two to three years old on September 30, 1954	12,400
Service stations three to four years old on September 30, 1954	14,700
Service stations four to five years old on September 30, 1954	15,700
Service stations five to six years old on September 30, 1954	18,300

SOURCE: Company records.

<sup>\*\*</sup> Total for all "postwar" stations built since September 30, 1948.

<sup>\*\*\* &</sup>quot;Normal" volume, as described on page 255 is the volume a station was expected to achieve after the five-year lead-in period.

EXHIBIT 5

Velox Service Station Sales vs. Industry Service Station Sales in Velox's Marketing Area Percentage Increases in Gallonage from the Previous Year

	Velox Service Station Sales	Industry in Same Area *
1948	2.7%	8.4%
1949	3.4	8.0
1950	17.4	6.7
1951	18.8	7.0
1952	16.3	2.4
1953	13.5	4.7
1954—First Quarter	13.3	4.7
Second Quarter	9.6	4.0
First Half	11.3	4.3

<sup>\*</sup> American Petroleum Institute date.

The marketing department in its report to the president presented the figures shown in Exhibit 4, indicating that on the average the older the service station the higher the annual sales volume. These figures, the report commented, though not conclusive, tended to substantiate the slow growth in volume which was thought to be characteristic of new stations.

In addition to reports of annual service station volume, the president had information available concerning Velox's gasoline sales volume and that of the whole industry. Exhibits 5, 6, and 7 present excerpts from this information. Exhibit 5 compares Velox service

EXHIBIT 6

U.S. Consumption of Gasoline and Gasoline Stocks 1949–1954

	Consumption of Gasoline—Thousands of Barrels per Day	Gasoline Stocks— Millions of Barrels	Days of Gasoline Consumption on Hand
1949 (Average)	2,501	106.2	42.5
1950 (Average)	2,724	109.4	40.2
1951 (Average)	2,987	118.0	39.5
1952 (Average)	3,162	125.1	39.6
1953 (Average)	3,371	143.1	42.5
1954 (Estimate average)	_ 3,393	155.7	45.9

SOURCE: Survey of Current Business, March Issues, and Company Records.

station sales increases over the past year with similar data for all gasoline sales in the Velox marketing area; Exhibit 6 presents figures on the consumption of gasoline and the gasoline stocks during the last three years; and Exhibit 7 shows some *National Petroleum News* data pertinent to the gasoline service station business.

#### The Net Income from Sale of Gasoline

The net income for each of the three channels was calculated by subtracting from the gross sales of that channel the cost of crude oil, refining costs allocated by value of refined products, transportation costs, and all direct and indirect marketing expenses for the channel. In addition there was subtracted from the gross sales of the bulk plant-service station channel the cost of gasoline purchased from other companies for distribution through that channel. In 1953, 55 million gallons were bought for the bulk plant-service station channel, about one-fifth of which was handled by the company's service stations built since 1948.

In order to evaluate the income from the bulk plant-service station channel the controller compared cumulative capital commitments for marketing facilities with cumulative cash income after taxes for the previous six-year period, including estimated figures for 1954 (Exhibit 8). The cash income was the difference between total sales and the aggregate cost of crude oil plus all refining, transportation, and

**EXHIBIT 7**Estimates, Forecasts, and Records for U.S.

	Total Gasoline Sold Through Service Stations Millions of Gallons *	Average Total Monthly Sales Gasoline per Service Station per Month *	Number of Service Stations **	Number of Passenger Cars— in Thousands	Service Station Building Permits Issued ***
1950	28,522	12,556	189,294	40,167	5,446
1951	30,503	13,495	188,361	42,525	3,092
1952	32,468	14,401	187,877	43,646	3,632
1953	35,501	15,722	188,157	46,245	4,577
1954 †	37,100	16,316	189,490	47,478	5,899

<sup>\*</sup> N.P.N. Estimate.

SOURCE: National Petroleum News, June 30, 1954, p. 85.

<sup>\*\*</sup> Based on Bureau of Census and Bureau of Labor Statistics data.

<sup>\*\*\*</sup> Based on Bureau of Labor Statistics data.

<sup>†</sup> N.P.N. Forecast.

EXHIBIT 8

Cumulative Commitments and Income 1949 to 1954—in Millions

	Cumulative Commitments, All Marketing Facilities	Cumulative Cash Income After Taxes Bulk Plant-Service Station and Branded Jobber Channels	Cumulative Cash Income After Taxes Bulk Plant-Service Station Channel
1949	4.7	2.1	1.4
1950	8.3	4.3	2.9
1951	12.6	6.5	4.5
1952	17.0	9.7	7.0
1953	21.4	13.2	9.6
1954 (est.)	24.8	16.6	12.6

SOURCE: Company records.

marketing expenses, except depreciation. The cumulative commitments included \$5.9 million for service stations which were subsequently sold and leased back, and the cumulative income figures showed income before deduction of \$1.0 million in rental costs. The controller presented the yearly cumulative figures in a report to the president with the following comments:

For the six-year period 1949-1954, cash income from bulk plants and service stations has been \$12.2 million less than the capital commitments of \$24.8 million for marketing facilities. The cash income from the bulk plant-service station and branded jobber channels together has been \$8.2 million less than the capital commitments for marketing facilities.

It should, of course, be anticipated that cash income would build up more slowly than capital commitments, particularly in view of the fact that our investment in marketing properties was relatively small at the beginning of the six-year period. On the other hand, however, it should be noted that the cash income figures used in the Exhibit *include* the new income attributable to manufacturing as well as marketing operations. Moreover, the upward trend in cumulative cash income has been so slow relative to that in cumulative capital commitments that it may be some years before cash income can catch up with capital commitments.

#### Conclusion

Early in December, 1954, the president of Velox Oil Company had before him all the information presented in this case. By the fifteenth of the month he planned to submit to the board of directors the 1955 capital budget, part of which would be for recommended expenditures by the marketing department.

#### **BLACKSTONE MINING COMPANY**

# A Problem in Business Investment

The case raises the question of liquidating an investment in a mining property. It focuses on the problem of negotiating a price which will be satisfactory to both the Blackstone Company, which owns a 25 per cent ownership interest, and another corporation, which owns the remaining 75 per cent and has indicated an interest in acquiring 100 per cent ownership in the mining property.

In March, 1953, the Blackstone Mining Company was considering an offer of \$600,000 for its holdings of 30% of the stock of the Shurcliffe Mining Company which owned and operated a large iron mine. The offer had been made by Victor Mines Incorporated which owned the remaining 70% of the stock and which was responsible for the operating management of Shurcliffe. When the offer was made, a meeting had been scheduled between representatives of the two companies, where Blackstone's answer would be discussed.

A vice-president of Blackstone examined the operating records of the Shurcliffe Mining Company and made the following comments:

Victor Mines Inc. has recently expressed interest in acquiring the 30% stock interest held by Blackstone. This proposal is of interest to Blackstone because (a) the managerial problems associated with the continued participation in the mining venture are somewhat burdensome, (b) the operating expenses incurred by Shurcliffe under the Victor management are regarded as excessive, and (c) the Shurcliffe production is declining rapidly and the properties are approaching the point of economic abandonment. . . .

Blackstone's production department prepared estimates for the future net cash income, after all taxes, which Blackstone could expect to derive from Shurcliffe's operations under the present ownership arrangement. Commenting on the probable pattern of income if Blackstone retained 30% interest, as shown in Table 1, the Blackstone vice-president made the following statement:

If Blackstone retains its 30% stock interest, the Shurcliffe properties will probably be operated on the present basis until about 1960. At this point,

assuming no increase in ore prices, the Shurcliffe Mining Company would begin to incur operating losses, and the company would, therefore, be liquidated. The two owners would pay capital gains taxes at the time of liquidation. It may be assumed that thereafter the properties would be operated by Victor, with Blackstone retaining a 30% working interest. In 1966, the properties and facilities would probably be sold for their salvage value.

Blackstone's management accepted the estimates of future income as accurate, since the company had had long experience with the properties, and future rates of ore production could be predicted with a considerable degree of assurance. As a matter of fact, Blackstone's management felt that it had very few investments whose future income could be estimated more reliably. And, though it could not be sure, the Blackstone management thought this would probably hold true for Victor also.

The production department also estimated the net cash income which Victor would receive if that company owned 100% of the Shurcliffe Mining Company (Table 2). These estimates showed that Victor's income from 100% would be more than 3/7 (30%/70%) larger than the present cash income derived from its 70% interest. There were three reasons for this additional benefit: (a) Victor would be in a position to make certain savings in operating expenses, (b) Victor would avoid the intercorporate dividend taxes which it was currently paying on the dividends received from Shurcliffe, and (c) Victor would avoid payment of the capital gains tax which would be levied if Shurcliffe were liquidated as anticipated in 1960. Both these tax obligations would be eliminated if Shurcliffe were consolidated with Victor, an action possible under the tax laws when a stock interest of over 80% is owned.

Blackstone's officers also noted that, should their company decide to sell, it would be subject to the 25% capital gains tax on virtually the whole price received, since Blackstone's cost base was very low; Victor could avoid this tax by consolidating the Shurcliffe Company, and continuing to operate the mine until it was depleted.

What plan of negotiation would you prepare for the scheduled meeting? Your plan should consider the minimum price you would accept and an estimate of the maximum that might be expected.

TABLE 1

Blackstone's Cash Income from Shurcliffe After All Taxes if 30% Stock Interest Is Retained

1953								 						 		\$ 94,716
1954								 						 		162,343
1955					 			 						 		133,297
1956					 			 						 		105,943
1957					 									 		84,858
1958					 			 						 		63,859
1959					 											43,755
1960					 			 						 		95,728
																784,499
1961					 									 		40,731
1962					 			 						 		24,013
1963					 											11,394
1964	ĺ.,									 						(740)
1965										 						(8,933)
1966					 									 		121,301
Tot	tal													 		\$972,265

TABLE 2
Estimated Gains after Taxes Realized by Victor from Purchase of Blackstone's 30% Interest

	Victor's Income From Shurcliffe After Purchase (100% Interest)	Victor's Income From Shurcliffe Before Purchase (70% Interest)	Gains Resulting From Purchase
1953	\$ 400,275	\$ 221,002	\$ 179,274
1954	718,916	378,802	340,114
1955	627,247	311,025	316,222
1956	515,144	247,200	267,944
1957	438,706	198,002	240,704
1958	362,517	149,007	213,511
1959	287,170	102,098	185,072
1960	224,767	223,365	1,402
1961	166,564	95,036	71,529
1962	108,994	56,033	52,961
1963	67,506	26,584	40,922
1964	33,739	(1,726)	35,464
1965	4,159	(20,844)	25,002
1966	311,518	283,034	28,484
	\$4,267,222	\$2,268,616	\$1,998,605

**EXHIBIT 1**Financial Information on Victor Mines Inc., in Millions

	1952	1951	1950	1949
Current Assets Total Assets Current Liabilities Net Worth Debt and Net Worth	10.9	10.3	10.3	9.3
	40.0	37.3	35.0	32.8
	4.1	3.9	4.1	4.3
	32.6	30.2	28.0	25.5
	35.9	33.4	31.6	28.5
Sales	33.0	30.2	31.1	31.1
	4.0	3.8	4.3	4.2
Earned per Share Dividend per Share Price per Share (average)	8.44	7.90	8.76	8.84
	3.40	3.30	3.22	3.19
	85	73	66½	63

**EXHIBIT 2**Financial Information on Blackstone Mining Company

	1952	1951	1950	1949
Total, in Millions of Dollars				
Current Assets	91.9	88.4	89.4	82.3
Total Assets	286.6	273.7	256.3	237.2
Current Liabilities	33.9	34.7	34.8	29.8
Net Worth	217.4	203.5	191.3	177.9
Debt and Net Worth	253.0	239.1	221.6	207.3
Sales	236.8	220.3	215.1	201.9
Net Income, After Taxes	25.3	22.6	22.8	20.9
Per Share, in Dollars				
Earned per Share	10.68	9.53	9.55	9.18
Dividend per Share	5.35	4.85	4.85	4.50
Price per Share (average)	165	128%	120	112½
				1

# ACADIA AUTO ACCESSORIES, INCORPORATED

Self-Insurance on Workmen's Compensation

This case offers the opportunity to analyze figure data as an aid in reaching a decision as to whether or not to self-insure for work-man's compensation insurance. The issue offers the typical dilemma of lack of certainty in considering alternate courses of business action.

Acadia Auto Accessories, Inc., manufactured light-rolled metal products for automobile and appliance manufacturers. The company was the major employer in a small Massachusetts town. Labor turnover was low, and management considered employee relations to be excellent. There was no union. Sales were roughly five to seven million dollars annually. Exhibit 1 shows Acadia's financial condition at the end of 1948 and 1951.

The company had grown from a shoestring operation in 1931 with 11 employees to over 500 employees in 1951, half of whom were women.

Accidents were few and rarely serious. Operations were not particularly hazardous; most of them were done on continuous strips of material. Thus, although there were many punch press operations, few of them involved hand feeding.

In 1952, Mr. Harry Parker, treasurer, and Mr. A. J. Devlin, controller, of Acadia Auto Accessories, Inc., were considering the advisability of self-insuring their workmen's compensation liability. Mr. Devlin had felt for some years that the company was paying too much for workmen's compensation insurance. Recently he had counted the number of days lost on account of industrial accidents during the past three years. He found that the average annual number was about 1,000. As premiums were about \$30,000, this meant an average daily cost of \$30 which he felt was excessive, especially since he could remember very few cases involving expensive surgery or lengthy disability.

Accordingly Mr. Devlin phoned Mr. T. K. Conklin of Hamilton,

Harrison and Conklin, general insurance brokers, who had handled Acadia's insurance for years, and asked him to call in to discuss ways of reducing compensation expense. Mr. Devlin added that he was thinking seriously of self-insurance.

EXHIBIT 1
Condensed Balance Sheet

Assets	December 31, 1948	December 31, 1951
Cash	\$ 185,134 368,352 473,796	\$ 446,264 371,831 760,963
Securities Plant and Equipment, Net Prepaid Items C. S. V. Insurance	65,000 403,583 10,651 20,910 \$1,527,426	$-$ 775,340 11,395 20,954 $\overline{\$2,386,747}$
Liabilities	Ψ1,021,120	Ψ2,300,111
Accounts Payable Notes Payable Reserve for Contingencies Capital Stock Surplus	\$ 385,386 60,000 62,500 420,000 599,540 \$1,527,426	\$ 505,703 80,000 200,000 420,000 1,181,044 \$2,386,747

When Mr. Conklin called, a few days later, he agreed that the insurance company was probably making money on Acadia business. "Your losses are below the industry average," he said. "Acadia is an unusually safe place to work. There are no toxic or explosive materials or even anything unusually inflammable anywhere in the plant. But all that is figured in your rate and if your losses stay low your rate will come down. Anyway you could not possibly assume all your own workmen's compensation liability. It would be too risky." Mr. Conklin pointed out that most of Acadia's buildings were more than 100 years old, and since they were perched on the edge of a river a building might possibly collapse, injuring 100 people or more all at once.

"Fortunately," Mr. Conklin continued, "a half-way course is possible. Our company offers a self-insurance plan whereby for thirty per cent of the normal premium you get loss prevention, claim

settlement, and rehabilitation service plus a reinsurance policy that would take over all losses beyond your normal premium. Here is the proposition." He then presented the memorandum shown as Exhibit 2.

After Mr. Devlin and the treasurer had looked over the plan, Mr. Parker remarked, "Let me see if I have this right. We pay thirty per cent of the premium to you. You look after all the administration, claim settlement, loss prevention, and all that. We pay all losses up to seventy per cent of the premium, which brings our total possible expenditure up to the same amount as we now pay to the insurance company. You pay everything over that."

Mr. Conklin answered, "That is correct, except that we are not underwriters ourselves—we reinsure with other companies."

Then Mr. Devlin said, "We also have to pay \$300 per year for the bond and \$330 for the \$1 million of extra coverage. Who writes the checks to the injured employees? If we do, that would cost something unless we could find someone not too busy to have that added to his duties."

Mr. Conklin replied, "Yes, that would add something for clerical costs. Most companies prefer to write the checks. The fellows will know you are self-insured that way. Anyway, we are not allowed to negotiate with the injured employee. The lawyer who does all the claim settlement work acts as your representative, not ours. You give him all the details of the man's pay, and so on. He figures out the settlement and you write the check."

#### **EXHIBIT 2**

#### Memorandum

TO: Acadia Auto Accessories, Inc.

FROM: Hamilton, Harrison and Conklin

RE: Workmen's Compensation Self-Insurance Plan

Based on an estimated premium of \$29,000 for the coming year, we are prepared to furnish an aggregate excess reinsurance contract at a cost of 30 per cent of this estimated normal premium which guarantees that all losses in excess of 70 per cent of the normal premium would be paid by the reinsurers.

The aggregate excess reinsurance contract furnishes complete claims and safety engineering services such as are now provided by the company writing their full-cover Workmen's Compensation insurance.

The 70 per cent balance of the estimated annual normal premium remains in the assured's possession, and as losses occur they are paid out of this fund after complete investigation and adjustment by the claims department of the reinsurers.

At the end of the insurance year, any balance remaining in this 70 per cent fund, after the payment of losses and provision for outstanding reserves, represents a cash-in-hand saving to the assured.

If, on the other hand, the losses should exceed 70 per cent of the normal

premium, then the reinsurance company would pay all in excess thereof.

Thus, the assured is placed in the position where his maximum potential cost cannot exceed the premium he would otherwise pay for full-cover insurance and if, on the other hand, the losses are less than 70 per cent of the developed normal premium, he would have realized a saving in this otherwise dead weight operating expense.

The state requirements for a self-insurer under the Workmen's Compensation Law make it necessary for the assured to apply to the Industrial Accident Board on a form which is enclosed herewith for a license to self-insure under the

Compensation Law.

After approval by the Board, they will require that the assured furnish the state with a self-insurer's bond in an amount which is at the discretion of the Industrial Accident Board, but we should estimate that in this instance the bond should be in the vicinity of \$30,000 or \$40,000.

The cost of the self-insurer's bond is \$7.50 per \$1,000 and this cost is in

addition to the cost of the reinsurance.

We failed to mention above that the aggregate excess reinsurance contract would contain a limit of \$200,000 and for additional coverage a supplementary aggregate excess contract in the sum of \$500,000 may be purchased at an additional cost of 1 per cent of the assured's normal premium or, in this instance, \$220, or \$1,000,000 supplementary coverage may be purchased at a cost of 1½ per cent, or \$330 in this example.

Mr. Devlin then asked how a case involving long-term disability would be handled. He explained that in 1951 a new employee, named Elmore, had slipped while carrying a load, and had suffered a hernia that, according to medical opinion, might render him permanently unfit for physical labor. Acadia's insurance company was required to take care of him indefinitely or until he was rehabilitated. Mr. Devlin wanted to know whether under self-insurance, the cost for future years would be charged against the year the expenditures were made or against the year the man was hurt.

"Yes," said Mr. Conklin, "against the year he was hurt. We make a guess as to the probable future cost of caring for him until rehabilitated and that is counted as a loss for the year in which the man is injured. If you had had this plan last year you would have paid Elmore's medical expenses and weekly compensation and, as approved by us, you would have set up as a reserve the amount we suggested to take care of him in the future. You would start over with a clean sheet the next year."

After Mr. Conklin had gone, Mr. Parker and Mr. Devlin discussed his proposition further. They felt that an outside safety engineering service was not as important to Acadia as it used to be. Every machine in the plant was now equipped with the most modern safety devices. Many had been designed by Acadia engineers with an eye to safety, and the inspector from the insurance company had found no fault with the safety precautions built into the machines. The state inspector had found no fault with the plant at any time. In general, they thought that the Acadia engineers were sufficiently aware of the safety devices in general use to have no further need of an outside assistance.

During the next week Acadia was visited by a safety engineer from Hamilton, Harrison, and Conklin and by a claim settlement expert who was a member of a legal firm which did much of this sort of work for Hamilton, Harrison, and Conklin.

Mr. Devlin accompanied the safety engineer on an inspection tour of the plant. Judging by his experience with previous safety engineers Mr. Devlin thought this man more thorough than the state inspectors had ever been and quite as thorough as the inspectors from Acadia's present insurance carrier. At the end of his tour the inspector remarked that everything looked very good to him and was a credit to the company engineers and the previous insurance inspectors. Next, he produced some figures for other companies which showed a considerable decline in workmen's compensation expense since the introduction of plans similar to that proposed for Acadia. He also produced a long list of names of companies in Massachusetts which had adopted the plan. "We have looked after these people for years now," he said. "Ask any of them how we stack up."

The lawyer also had a look around the plant but spent most of his time discussing workmen's compensation cases in which he had participated. He was pleased to learn that a medical examination had been made a standard part of the induction process early in 1952. "This," he said, "helps cut losses, keeps unfit men out of dangerous jobs and helps fix responsibility in the event of loss."

The following day Mr. Devlin called on the commissioner of selfinsurance for workmen's compensation in Boston, and explained the step his company was considering. He asked him how the board felt about self-insurance on workmen's compensation and if companies similar to Acadia had had a satisfactory experience with it. The commissioner, assured him that the procedure was perfectly legal and so long as the rules were complied with there was no danger of opposition from the board. The commissioner went on to say, "The service companies have been doing a good job. They have made self-insurance possible for many companies which would be quite unable to obtain the necessary reinsurance or perform the necessary service functions themselves."

Mr. Devlin also asked the commissioner if Acadia were large enough to self-insure. He replied that there were many smaller companies doing it and that any company could, technically, qualify by providing a bond of \$20,000, but as a practical matter a company could only undertake such a program if it could obtain reinsurance to protect it against calamity losses. Companies which developed a premium of less than \$15,000 typically were unable to obtain reinsurance. "Your premium," he added, "is nearly twice that big."

Mr. Devlin's next question was, "Do many people go back to insurance companies after trying self-insurance?"

To this, the commissioner answered that by March 31, 1952, about 230 Massachusetts companies had applied for a license to self-insure. Of these 51 had gone back to insurance companies—mostly because they were too small. They just didn't develop enough premium to make it worth while for a company like Hamilton, Harrison, and Conklin to handle the services and arrange the reinsurance or "stop loss insurance," as it is sometimes called. "Of course," he added, "the program is very young in Massachusetts. We have only been running it since 1943. It takes 5 or 6 years to evaluate such a program properly.

"As to whether you could save money by self-insuring I cannot say. Results are hard to measure. Self-insurers do not often segregate all their insurance costs. They also seem to pay out more per claim—or at least a Pennsylvania survey 1 conducted in 1934 showed that self-insurers paid out twice as much per claim as did insured companies. This might be generosity, ignorance, or carelessness and in any

<sup>&</sup>lt;sup>1</sup> "Self-insurance of Workmen's Compensation in Pennsylvania," by Howard M. Teaf, Jr., Pennsylvania Department of Labor and Industry, Special Bulletin, No. 40, Part II.

case is claimed to have a good effect on employee relations which offsets the higher cost by better productivity. The figures may not mean much, however, since self-insurers do not always report minor compensable injuries which would have helped the average.

"Insurance companies' expenses break down something like this:

Sales Costs—Commissions, Expenses, etc.	10%
Claim Adjustments	10
Rating Bureau and Inspection Expenses	4
License Fee and Taxes	2
Home Office Expense	10
	$\frac{-}{36\%}$

The rest of the premium income goes to pay losses. Some of those functions can be eliminated by self-insuring—some you might be able to do cheaper."

Mr. Devlin then called on one of the larger insurance companies in town and explained to their workmen's compensation expert, Mr. Morrow, that he was considering self-insurance and wondered whether he could get the other side of the story. Mr. Morrow leaned back in his chair and said, "To begin with, we are not against self-insurance. As far as we are concerned it is just another competitor like X Company or Y Company down the street. We believe there is a place for self-insurance and yet we try and get all the business we can. Why doesn't everybody do it? Well, I'll tell you.

"People who self-insure can be divided roughly into five groups. First of all, there are the large nonprofit organizations like Harvard University. They have any amount of money to put up as a guarantee of their ability to pay. Since they continue to collect interest and dividends it costs them nothing to tie up capital in this way. Maybe they pay more as self-insurers than they would if they were insured with a company, but they would rather have it that way. They feel they get it back in terms of good will.

"Then there are the huge national concerns like Dupont, Ford, and Sears. They have as much diversity of activity and geographical dispersion of risk as many insurance companies.

"The third group comprises the large local concerns such as New England Telephone and Telegraph, the Boston and Maine Railroad, and some other railroads. These people obviously have all the characteristics of self-insurers, and they have traditionally adhered to a policy of self-insurance or noninsurance.

"There are always a few cranks who don't insure because they don't like insurance companies or because they have had a bad experience. They may think they're self-insuring, and sometimes they are; but sometimes they're just taking risks. They don't have any diversification. They don't have a big enough operation to warrant providing service facilities. Their premium would be trivial compared to the risks they run.

"The fifth group is the group into which you fall. You're not big enough to provide all these services yourself, but you can buy them through a service company. You are not financially strong enough to stand catastrophe losses, but you can buy reinsurance. You are certainly big enough to qualify for reinsurance and develop a big enough premium to make it worth while for a service company to take over the account. The tough question to answer is whether or not you should self-insure. You must remember that workmen's compensation costs are rising. Hospital expenses for a hernia case used to run about \$6 a day in 1942. They now run from \$12 to \$24. The operation itself cost \$350 in 1942; it now costs \$750. Weekly compensation is going up, too, to meet the rising costs of living. And, as you know, it is the policy of the government for social benefits of this sort to be enlarged rather than diminished. New types of disability are being included all the time. All this works in favor of buying insurance, since all premiums are based on past experience one way or another, and future costs these days have been higher than past costs. On the other hand, the frequency and severity of industrial accidents is being reduced all the time by the fine loss prevention work we do. Of course, the state provides an inspection service too, but you have had enough experience already to know that the insurance company inspector is much more thorough than the state one.

"The biggest and best argument," concluded Mr. Morrow, "is that hundreds of companies, large and small, many of which could easily qualify for self-insurance and meet all the traditional tests as to size, dispersion, diversity of occupations, and so on, still prefer to buy insurance. They would rather have their injured employees deal with an insurance company. This turns antagonisms away from the company. I could name a very large company, one of the biggest. They

were self-insured, and had an insurance department as big as some insurance companies. Then they made the insurance department into a separate insurance company. They didn't like the way the insurance department employees got so friendly with the others. They said the employees didn't like fighting for a better settlement against their own company. Now the insurance company takes all the knocks. The men don't blame the company, and when company officials help a man get a decent break they get credit for it. That company is big enough to have it both ways. I could give you a list of companies that do insure, hundreds of times longer than the list of those that self-insure, and it would include some of the best companies in the country. Here is a little note we give to our agents to help them hang on to a client who is considering self-insurance. I think you should look it over." (See Exhibit 3.)

Mr. Devlin next visited the Massachusetts Workmen's Compensation Rating and Inspection Bureau where he asked for an explanation of the rating system so that he could understand why Acadia's premiums were so high compared to losses. This is what he was told:

"We set all rates for workmen's compensation in this state. Losses, premiums, payrolls, and other useful statistics concerning the experience of all insured companies in the state are reported to us. In order to simplify the rate-setting process and to produce large groupings for the application of probability analysis, all companies are classified into industry groups according to frequency and severity of accidents. Acadia is classified as a light hardware manufacturer designated number 3146. This classification includes some companies whose operations are more hazardous than yours and perhaps some that are less hazardous but they are all nearly alike. The manual rate for classification 3146 depends on the losses of all the companies in the group, not just Acadia.

"The manual rate is then adjusted to make allowances for the experience of the individual companies. The adjustment is either debit or credit. Because there are so few manufacturers in your classification and because you are a relatively small company, adjustment that gave full credibility to recent industry experience or to your own recent experience would result in a wildly fluctuating premium and no one would be happy. So recent years do not have a heavy weighting. It takes a long time under those circumstances

for the experience modification to result in a premium you would consider fair and reasonable when losses are falling. But it works to your advantage when losses are rising."

While he was at the rating bureau Mr. Devlin obtained the data shown in Exhibit 4 concerning the experience of Acadia over the

last 8 years.

Mr. Devlin returned home and found a letter (Exhibit 5) from Mr. W. J. Rhodes, the office manager of a manufacturing company, located in Exdale, an industrial city in western Massachusetts. Mr. Devlin had heard that Rhodes' company had recently dropped self-insurance of workmen's compensation and had written for particulars.

#### **EXHIBIT 3**

# Factors to Consider Before Undertaking Workmen's Compensation Self-Insurance

The advantages of self-insurance are based on two major premises:

1. A savings in insurance costs; and

2. An improvement in employer-employee relationships.

If both of these situations obtain, naturally, there is an advantage of self-insurance. However, there is no certainty that they will. The disadvantages, on the other hand, are many:

- Before going into this plan, consideration must be given to the matter of discontinuing it, if need be, and the attendant difficulties. The necessity or desire to change back would occur under two important circumstances.
  - a. The increased cost of reinsurance or the loss of your reinsurance market (which is foreign and therefore susceptible to either condition); or
  - b. Bad experience (which would make it entirely impractical for you to continue the plan).

You would have two immediate, and probably expensive, problems in withdrawing from the celf incurrence plan.

withdrawing from the self-insurance plan.

First, you would have to agree with the reinsurer on reserve amounts sufficient to carry outstanding cases to their conclusion, or you would have to make lump sum settlements. In effecting a lump sum settlement, you are apt to be faced with this situation:

Although the employee, in his own interest, and you, in his and your interests, will want to make settlement as substantial as possible, your reinsurer will want it to be made on the smallest possible basis. This difference of attitude could very well lead to a dispute. Disputes of this nature have been settled by recourse to the courts.

Second, in order to return to standard Workmen's Compensation, you would be required to file a bond with the insurance department. To satisfy the department, you would be required to file a bond in an

amount sufficient to settle all of your outstanding cases.

As you know, your liability would be absolute and might, therefore, involve a long-term commitment. Bonding companies do not normally, regardless of the soundness of the business concerned, write long-term bonds without full cash collateral. Thus, you might be put in a position of having to produce cash collateral of thousands of dollars to cover the full equity of outstanding cases, in order to secure the necessary bond.

2. The normal plan for self-insurance calls for a maximum catastrophe limit of \$250,000. Under the Workmen's Compensation Law, the employer has

complete and unlimited liability.

As an example of how extremely dangerous it is to limit your liability (which the self-insurance plan does), we cite the case of Monsanto Chemical in Texas City. The private carrier had reinsurance of several million dollars, which turned out to be inadequate. However, the loss differential had to be absorbed by the *carrier* and not by Monsanto. Under a self-insurance plan, in the event of a catastrophe loss, the excess over \$250,000 would be borne by the *employer*.

- 3. Another undesirable feature of self-insurance is the reimbursement operation. Under the reinsurance arrangements, the self-insurer has to distribute checks for all payments due to injured employees, and he will be reimbursed for such payments by the reinsurer within a two-year period. Aside from the fact that the reinsurer has the use of your money for two years, such an arrangement necessarily entails the setting up of a bookkeeping system.
- 4. Taxwise, the disadvantage of self-insuring is that, in the event of an accident, although a full reserve for possible claim must be set up immediately, tax credit is allowed only on amounts paid out. No tax allowance is permitted until moneys have been actually disbursed to the employee or employees.
- 5. Under a regular workmen's compensation insurance policy, the company carrying your coverage is desirous of keeping the cost as low as possible and the experience as good as possible, as its method of making a profit. Under a self-insurance plan, the service representative receives a percentage of the standard premium developed by the risk. The only way in which the service company's financial benefit can improve is by increases in the standard premium. This position, obviously, is exactly opposite to that of the regular insurance carrier.

Under these circumstances, it is easy to understand why the regular insurance company's engineering facilities should be far superior (since they stand to benefit thereby) to the engineering facilities provided by a service representative (whose sole financial gain would result from worse

rather than better experience).

We think that the above possible disadvantages should be given serious study before any action is taken.

EXHIBIT 4					
Workmen's	Compensation	Experience,	1944–1951		

	Payroll	Premiums	Losses *
1944	N.A.	\$ 4,184	\$ 1,110
	\$ 325,000	4,717	1,441
	517,000	8,504	5,557
	692,000	10,949	5,646
	825,000	17,689	16,262
1949	942,000	20,518	6,313
	1,244,000	32,996	11,158
	1,284,000	29,520	20,772

<sup>\*</sup>Losses include treatment and compensation payments for cases originating in the current insurance year and also a reserve for payments for employers whose disability is expected to last longer than the current year.

#### **EXHIBIT 5**

#### DEAR MR. DEVLIN:

You asked me if we had the same self-insurance plan as you are considering and also why we dropped it. From your letter, I gather that the service company arrangement with stop-loss reinsurance is identical to our own. We dropped it because our losses went up and it proved to be too costly. We found ourselves paying for service and doing it ourselves at the same time. Then we had a change of management and the new management didn't like self-insurance; so we have gone back to an insurance company.

The bad losses seemed to be just tough luck. One of our female employees developed a bad back and moved out of state. It was all very complicated and cost a great deal before we got it straightened out. Then we had a couple of serious burns from molten metals and a couple of hand amputations. Our losses far exceeded our old premiums.

The second thing was the service. The safety man from the service company got around here once or twice a month. In a city the size of ours, all the big insurance companies are well represented by branch offices or agencies and since our industry is concentrated in this area, they are experts in our line. Now the safety man is here two or three times a week and works closely with our new safety department. The same thing goes for claim settlements. When we were self-insured, the service company sent out a lawyer when we had an accident. Very often he couldn't get out here until the next day and sometimes longer. Now the insurance company representative is on the spot ten minutes after an accident. We can get him when we want him. Of course, your town is too small to support large insurance agencies or branch offices and I expect you get all of your service from Boston either way.

The third thing was the cost of administration which proved much higher than we thought it would. There was check-signing and accounting for losses and reserves. We had to design special forms and special checks. We had an extra bank balance to reconcile each month, etc. We ended up with an insurance department of our own with seven full-time people in it. As to the psychological effect you inquired about, so far as I could see there wasn't any. One thing we do notice is that our losses have improved since we started buying insurance again but we also started our own safety department at that time. The safety fellows wander through the plant checking up on safety regulations, watching for hazardous situations, and working with the foremen to eliminate them. We consider the safety department a great success.

This does not mean that I am advising you against self-insurance. It seems to work out fine with many companies, but it didn't work with us. Both of our local competitors took on self-insurance at about the same time we did. One still has it and claims that they are saving money. The other dropped it a year or two after they began. Incidentally, the company that dropped it had twice as many employees as we, that is, about 1,400. The one that is still self-insured is considerably smaller than we are so it is hard to generalize about size.

Best regards. I will be interested to hear what you decide to do.

Very truly yours,

W. J. Rhodes Office Manager

Mr. Parker, Mr. Devlin, and the president planned to meet the following afternoon to discuss the proposition. An early decision was important, because the renewal date on the present policy was approaching fast, and Devlin wanted to avoid the penalty involved in cancelling the policy part-way through the year. Parker was inclined from the first to accept the self-insurance proposal. The president, however, was against it at first, mainly on the grounds that it looked like "something for nothing" and had insisted on a very thorough survey of the problem before taking action. At the same time, he was not pleased with the way Workmen's Compensation costs were rising and was willing to explore this possible means of reducing them.

How would you go about making this decision on self-insurance? What action would you recommend?

## THE NEW ENGLAND BAKING COMPANY

#### Review of Insurance Carrier

This case deals with a company's efforts to reduce insurance costs through a change in insurance carrier. It focuses on the analysis required to reach a rational decision on the proposal under review.

In November, 1954, Mr. Gordon Thompson, office manager of The New England Baking Company, Inc., was reviewing a report made by a local agent of the Gibraltar Insurance Company. (See Appendix 1.) According to this report, The New England Baking Company could have saved about \$250,000 in 1953, with the same coverage, and even more in the future, by insuring with Gibraltar rather than with their present carrier. These savings were to be achieved partly by reducing hidden costs or uninsurable cost in operation (see Exhibits 1 and 2) and partly by lowering premiums. In the light of these impressive savings, Mr. Thompson was considering the advisability of transferring his company's business to the stock 1 company from the Pilgrim Mutual Insurance Company.

# **Background History of Company**

In the last decade, the sale of The New England Baking Company's products had more than tripled. Increased demand had necessitated the expansion of existing capacity largely through the addition of several new bakeries and sales agencies. Over the same period, the number of employees increased from 1,962 to 3,012. The president felt that the good profit record, sustained in the face of a severe postwar decline in U. S. bread consumption, testified to the

Mutual companies also assume liability in their corporate capacity. Their distinguishing feature, however, is that they are controlled by the policyholders, instead of by

stockholders, and any profits from operations accrue to the policyholders.

<sup>&</sup>lt;sup>1</sup> The distinguishing feature of stock companies is that they are owned and controlled by stockholders and are operated to yield a profit to the owners. Liability is assumed by the company in its corporate capacity; a definite premium is charged and the consequences must be borne by the company alone, should losses exceed the premium income.

soundness of the company's policy of plant expansion and concentration on service to customers.

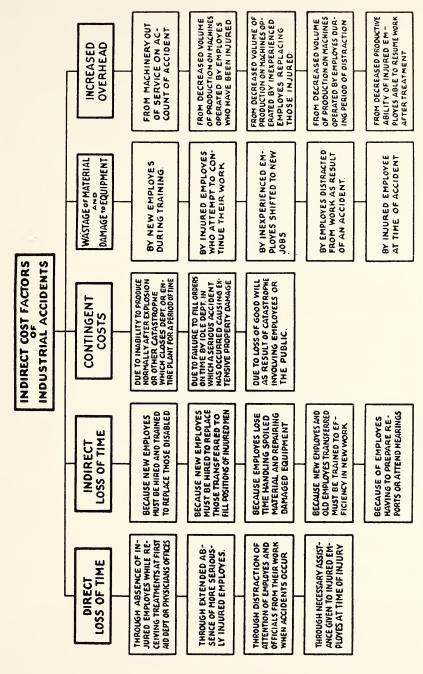
The New England Baking Company had eleven baking plants located in strategic centers from the heart of New England to central Ohio. From each plant a large fleet of trucks distributed fresh bread, cakes, pies, and other products to surrounding communities. In addition, these plants delivered fresh bakery products daily to thirteen sales agencies, all of which, in turn, operated fleets of trucks for distribution to more distant communities.

## **Present Insurance Program**

For the last fifteen years or more, Pilgrim Mutual Insurance Company had handled New England Baking Company's workmen's compensation, auto liability, and products liability insurance. In discussing the Pilgrim plan, Mr. Thompson said, "We like to feel that we are self-insured and in a way we are. We pay a premium that is determined in advance each year in accordance with a rating plan which reflects our past experience. For workmen's compensation, for example, the ratio of losses to payroll is averaged over the past three years. This loss ratio is then applied to our projected payroll for the coming year. The insurance company then applies a factor which provides for their loss prevention and claim settlement costs and allows them something towards their reserve for extraordinary losses and general overhead and profit. In calculating the loss experience, no claim is counted for more than \$10,000, even if an award greatly in excess of this amount is paid by the insurance company. This is, we feel, something like being self-insured. In the end we pay for the cost of every accident up to \$10,000 per claim. The fact that we pay a premium to the insurance company instead of paying doctor bills and hospital charges does not blind us to our own responsibility to keep losses at a minimum. On the other hand, the averaging process has the effect of spreading any unusually serious loss in one year over a three-year period. That is, if we had a bad explosion in one year, it would be reflected in our insurance premium in each of the three years beginning with the second year following the catastrophe. So, even though our premiums are closely tied to our losses, we still have fairly uniform insurance costs."

Mr. Thompson was not dissatisfied with the loss record and with the service rendered by the Pilgrim Mutual. Pilgrim representatives

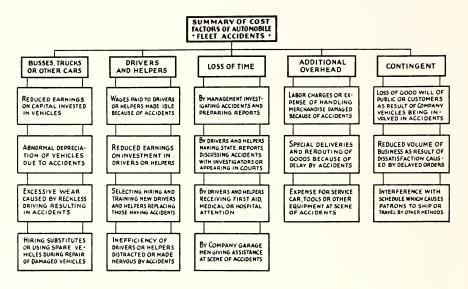




The foregoing costs are in addition to monies paid for Compensation Insurance, Special Medical expenses not covered by insurance, Benefit Systems, and any wages paid injured employees.

had repeatedly come in and organized safety programs in cooperation with the New England management. On several occasions they had sent specialists to analyze processes and materials when it was suspected that some toxic material or gas was responsible for recurring illnesses on certain jobs. The Pilgrim men had always continued the special investigations until the trouble was found and corrected. The Pilgrim representatives had always seemed to Mr. Thompson to be efficient, willing to be helpful, and easy to get along with. Reports from the managements of the numerous other factories and distribution centers included in the program confirmed Mr. Thompson's opinion that the Pilgrim men would be hard to beat when it came to courtesy, efficiency and service.

#### **EXHIBIT 2**



All of the above factors produce costs in addition to payments

for PERSONAL INJURY,
for DAMAGE TO OTHERS' PROPERTY,

for DAMAGE TO GOODS IN TRANSIT, and for DAMAGE TO THE VEHICLE ITSELF

whether or not these are covered by insurance

In the matter of loss settlement, too, Mr. Thompson had found Pilgrim reasonable and fair. "They never go over our heads," he said. "They talk doubtful claims over with us, and they settle out of court if they think it is to our advantage to do so, and they fight when they should—that is, when they think a claim is exaggerated or false." Mr. Thompson thought that his company was being well looked after in insurance matters and at a reasonable cost. The fact that the present carrier was a mutual company had never seemed a matter for concern, although representatives of stock insurance companies had often expressed the opinion that the lack of an agent and the danger of assessments if losses were heavy were serious drawbacks. Mr. Thompson knew that some mutual companies charge a very low premium and assessed members if losses exceed expectations. Others charge a very high premium and rebate a portion at the end of the year as a "dividend" if the loss experience was normal. Still others charge about the same premium as the stock companies but assess their policyholders for any deficit and refund any surplus once an adequate reserve is built up. Some mutual companies made no assessments, being similar to the stock company in that regard. Pilgrim Mutual had paid a dividend for so long that Mr. Thompson always thought in terms of net premium or premium less "dividend." He did not recall whether Pilgrim could assess its policyholders in the event of unusual losses but thought not.2

Accordingly, when the broker representing the Gibraltar Company pointed out that in fifteen years there was grave danger of complacency and high cost through lack of competition, Mr. Thompson was inclined to be skeptical. At the same time, he was a little disturbed at the way premiums were rising. As the rapid expansion of the last decade took place, the economies of larger scale production had materialized in many aspects of the company's business, but not, according to the agent, in insurance costs. Accordingly, partly in the hope that something might be discovered that would reduce expenses and diminish accidents, and partly on general principles, Mr. Thompson permitted the Gibraltar representative to proceed with the survey. Now having read it over, he thought that the size of the saving indicated, when compared with the company's net profit of about \$500,000 in 1947 and \$800,000 in 1948, was sufficient to warrant careful consideration of the Gibraltar proposal.

As Mr. Thompson, would you recommend transferring the company's insurance to the Gibraltar Insurance Company?

<sup>&</sup>lt;sup>2</sup> In fact it could not and there were very few assessing companies in existence at that time.

#### APPENDIX 1

A Workmen's Compensation and Liability Insurance Proposal

#### Introduction

It is our objective in this proposal to establish that:

- As dollar sales, unit volume, payrolls, mileage, and other exposures increase, insured loss totals need not increase because losses can be controlled, and that
- II. Under insurance rating plans available to your organization you can obtain a realistic and direct reflection of the good results obtained by loss control, and that
- III. The joint effort made to control and reduce losses, and to reflect such control in reduced premium charges where possible, will result in a true low net cost on a continuing basis.

### **Analysis of Current Program**

From a study of data made available to us we have drawn these conclusions:

1. You have sought and attained an apparent low net insurance cost.

2. The trend of your experience over the useful past has shown no marked deviation from the periodic variations in the average.

3. There has not been a proportionate climb of losses as your exposures

increased; there has, however, been a marked rise.

- 4. The prospective \* rating technique has tied your current cost level to past performance and has not given sufficient incentive to improve loss results.
- 5. Full weight has not been given to your own experience. On the contrary some weight has been given to the experience of other baking companies, which from manual rate indications has not been as good as yours.
- 6. Recognition has not been given to the important elements of hidden, uninsurable losses, these charges to overhead which are the direct result of accidents (whether or not an insured loss follows) and which in total are a factor of greater dollar weight than insurance costs—and just as certain.

## **Initial Approach**

In considering an improvement in your insurance arrangements on the types of coverage treated here we have in mind the development of low cost without sacrifice in coverage or in service. It is our aim to better both these last.

Direct treatment of the cost problem prompts consideration of two basic points:

- 1. The Question of Credibility
- 2. The Question of Real Cost

<sup>\*</sup> Premium is based on an estimate of losses for next year (hence "prospective") as determined by average performance in the past.

#### The Question of Credibility

Our examination of your current rating program discloses at least seventeen different experience modifications. This indicates merely that to obtain escape from "book" rates based on the experience of all risks in the same field, your risk has been broken down into many separate units for the application of experience rating plans, either mandatory or optional.

Obviously the weight given to your own good experience in your current rating varies directly as the size of your exposure premium in each rating. The ideal result lies in the treatment of all lines of the subject insurance in all states as an entity. Under existing state rate regulations the ideal situation is

not attainable.

An approach to substantial correction is to be had in superimposing upon as many of the underlying rating plans as is permitted, a Cost Plus rating formula, subject to a specified maximum and minimum. As against a current rating element of no more than 25 per cent in a single plan, you would then have an additional 50 per cent of your risk premiums in combination, subject to a single similar premium development formula. Since the attainable deviation from rates based on broad averages increases as the exposure base increases, the advantage to be gained is apparent.

[Mr. Thompson understood this to be essentially similar to the present plan with Pilgrim, with the addition of a maximum and minimum premium and with emphasis on the experience of the current year as a factor in determining the premium instead of on the average experience of the past three years.]

More important, however, is the operating principle of such a formula—a definite effect of the experience in a given year on the premium to be charged for that year.

#### The Question of Real Cost

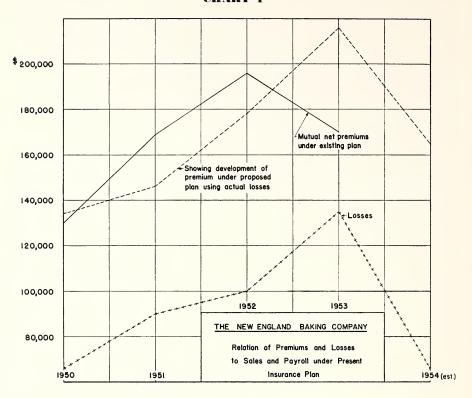
To be specific, we may best use figures from your actual performance. From Chart 1 and its supporting "Consolidated Development Table 1947-1954" we can draw these figures:

		1950	1953
Item I	Payroll	\$ 5,516,110	\$ 9,333,083
Item II	Sales	14,860,077	25,249,446
Item III	Automotive Units	1,041	1,308
Item IV	Gross Premiums (before dividend)	161,793	213,148
Item V	Net Premiums (after dividend)	129,435	170,518
Item VI	Insured Losses	65,896	140,756

These figures indicate an apparent saving between Gross and Net (Item IV-Item V) of \$32,358 in 1950 and \$42,630 in 1953. However, a study of the full cost of accidents in your operations makes it necessary to add to your Insured Losses (Item VI) the increased cost of operations chargeable to these losses and the accidents which produced them:

Item	VII	Uninsurable	Cost in	Operations		\$263,584	\$563,024
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CHART I



# Consolidated Development Table 1947–1954

Year	Payroll	Sales	Automobile Units	Net Premiums	Losses
1947	4,119,132	10,837,973	1,040	111,104	65,025
1948	4,552,258	12,525,958	963	102,924	54,643
1949	4,882,501	13,196,893	997	107,086	104,240
1950	5,516,110	14,860,077	1,041	129,435	65,896
1951	6,900,152	18,999,353	1,143	168,891	91,121
1952	7,905,753	21,527,434	1,302	196,330	100,080
1953	9,333,083	25,249,446	1,308 est.	170,518	135,330
1954	9,575,040 est.	25,123,000 est.	1,430 est.	185,000 est.	65,896 *

<sup>\*</sup> Assumed to return to 1950 level.

This Item (VII) produces figures that are impressive, to say the least. They are based on the accepted principle that accident cost to management in terms of plant interruption, production loss, damage to raw materials or finished products, equipment upkeep and repair, lost time, morale impairment, and other blocks to efficient operation will run to *four times* the amount of indemnity paid as an insurance loss.

In this picture your actual cost may be calculated thus:

		1950	1953	Increase
Item V	Net Premium	\$129,435	\$170,518	\$ 41,083
Item VII	Cost in Operations	263,584	563,024	299,440
		\$393,019	\$733,542	\$340,523

In this comparison it is evident that the increase in your hidden loss was more than seven times greater than your substantial increase in insurance outlay.

#### **Real Cost Control**

It is our point that losses need not increase as payrolls and sales increase. On this principle we submit this table:

Item I Item II Item III Item IV Item VI Item VII	1953 Payroll 1953 Sales 1953 Automotive Units 1953 Gross Premiums 1950 Insured Losses 1950 Uninsurable Cost in Operations	\$ 9,933,083 25,249,446 1,308 213,148 65,896 263,584
In this illus	tration you bear only:	
	1953 Gross Premiums	$213,148 \\ 263,584 \\ \hline $476,732$

Thus by re-establishing the 1950 loss level in the face of 1953 exposures there is indicated for the year 1953 a *real* saving of \$256,810.

In 1955 you are faced with possible insurance cost increases; they can best be offset by loss control and its obvious effect on Item VII.

## The Value of Cost Plus Rating

The figures on the preceding page in no way reflect the impact of the retrospective \* principle. Under such a plan, keyed to participation in the results of accident prevention, our Table of Real Cost would be thus improved, assuming a similar loss distribution:

		Present Plan	Cost Plus Plan
Item IV	1953 Premium	\$170,518	\$154,126
Item VII	1950 Uninsurable Cost in Operation	263,584	263,584
	_	\$434 102	\$417.710

<sup>\*</sup> Premium based on current year loss experience which can be known only at the end of the year (in retrospect) at which time the premium is adjusted.

Here we have indicated a further saving, through rating technique alone, of \$16,392.

We submit that such a combined potential, totalling \$273,202 must stand as a real objective for management. It requires no guarantee; attainment of any major portion of the objective would be worth while.

## The Test of the Proposal

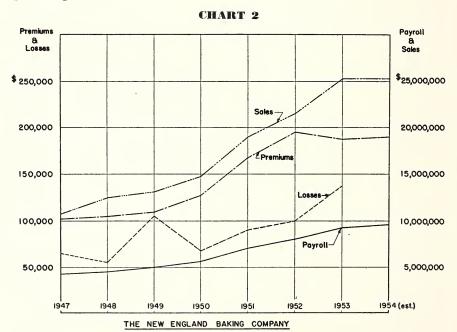
Because our program involves a combination of fixed and flexible rating plans, a condensed presentation of the results it would have produced for you is best given in totals. On the basis of a careful study of the distribution of premiums and losses we find that your insurance premium would have been:

\$ 3,320 more in 1950 22,404 less in 1951 18,357 less in 1952 37,365 more in 1953

76 more over 4 years

(See also Chart 2.)

From this coincidence we draw no conclusions; it is more important to consider the beneficial effect of such a plan in full operation, backed by an accident prevention and claim engineering program keyed to your risk on the basis of a plant-by-plant study for the discovery and analysis of the loss producing causes.



Premium Payments and Losses Under the Existing Plan and Proposed Plan

### The Proposed Underwriting Plans

Our proposal contemplates the use of three underwriting plans, as follows:

1. A Retrospective Rating Plan known as "Plan D"

2. A Retrospective Rating Plan known as the "Massachusetts Workmen's Compensation Retrospective Rating Plan"

3. A Fixed Price Plan

## Retrospective Rating Plan D

This plan will apply to "Workmen's Compensation and Employers Liability Insurance" in:

Rhode Island New Hampshire

Maine New York

It will apply also to Comprehensive Liability Insurance (except in New Jersey) to the limits specified:

Each Person \$10,000 Each Accident 10,000

Aggregate 25,000 (where applicable, that is, Products Liability

and Property Damage, Operations Property Damage, Protective Property Damage, Contractual Property Damage)

Note A: Application to New York Compensation subject to \$10,000 loss limit.

Note B: Application to Massachusetts Automobile Bodily Injury limited to nonstatutory coverage and the excess over statutory to \$10/10,000.

The Retrospective Premium, bracketed by the minimum and maximum Retrospective Premiums, will be the sum of:

1. The Basic Premium—a percentage of the standard premium, calculated by states and lines of insurance, as outlined above.

2. The Incurred Losses multiplied by the Loss Conversion Factor, the resulting total (by states and by lines) to be multiplied by the appropriate tax multiplier.

The first computation of the Retrospective Premium will be made between July 1 and September 1, 1956. This computation will be based on Incurred Losses valued as of June 30, 1956.

This Retrospective Premium may be the final premium for the year, if all Incurred Losses have been paid or if it is apparent that the Retrospective Premium will exceed the Maximum Premium.

If this first computation is not final, another shall be made between June 30 and September 1, 1957. This computation will be based on Incurred Losses valued as of June 30, 1957.

Further computations, if necessary, will be made if approved by the rating organizations having jurisdiction.

The Incurred Losses used in calculating the Retrospective Premium will be:

1. For Workmen's Compensation and Employers Liability Insurance—the actual paid losses and the reserves as estimated by the Gibraltar Com-

pany for unpaid losses.

2. For Comprehensive Liability Insurance—the actual paid losses and the reserves as estimated by the Gibraltar Company for unpaid losses, subject to the limits for each person, each accident, and the applicable aggregate as outlined above, plus allocated loss expense.

The factors (rating values) of our proposed Plan D are these:

## Percentages of Estimated Standard Premium

Factor	50%	100%	150%
Standard Premium	60,000	120,000	180,000
Basic Premium (average)	22.6%	20.7%	20.1%
Minimum Premium †	23.4%	21.6%	20.8%
Maximum Premium	140.0%	139.5%	139.0%
Loss Conversion Factor	1.13	1.13	1.13
Tax Multiplier (average)	1.035	1.035	1.035

Intermediate factors to be determined by linear interpolation.

NOTE: The following Basic Premium percentages determine the average given above at the 100% level:

New York Compensation	26.5%
Other Compensation	17.5%
New York Liability	24.0%
Other Liability	

The Tax Multiplier is simply a ratio designed to reflect the different tax situations in different states. It saves the expense and trouble of devising rate schedules each time taxes change and of having a separate rate for each taxation jurisdiction.

The following tax multipliers apply:

Co	ompensation	General Liability	Auto Liability
New York	1.036	1.031	1.063
Maine	1.026	1.031	1.031
New Hampshire	1.026	1.031	1.031
Rhode Island	1.047	1.031	1.031
Massachusetts	_	1.031	1.031
Ohio	_	1.036	1.036
Pennsylvania	_	1.031	1.031

<sup>†</sup> Basic Premium × Tax Multiplier.

# The Massachusetts Workmen's Compensation Retrospective Rating Plan

This plan will apply to Massachusetts Workmen's Compensation and Employers Liability Insurance only.

The factors applicable are these:

Standard Premium (est.)	50,000	60,000	70,000
Basic Premium	27.5%	26.5%	25.5%
Minimum Premium	55.0%	53.0%	51.0%
Maximum Premium	135.0%	133.0%	131.0%
Loss Conversion Factor	1.15	1.15	1.15
Tax Multiplier	none	none	none

The Incurred Losses used in calculating the Retrospective Premium will be the actual paid losses and the reserves, as estimated by the Gibraltar Company, for unpaid losses.

The Retrospective Premium, subject to the Maximum and Minimum Retro-

spective Premiums, will be the sum of:

1. The Basic Premium and

2. The Incurred Losses multiplied by the Loss Conversion Factor.

Computation of the Retrospective Premium shall be made as in Plan D, except that provision is made for a final computation between June 30, 1958, and September 1, 1958.

#### **Fixed Price Plan**

The Fixed Price (or Guaranteed Cost Plan) will apply to:

- 1. Workmen's Compensation and Employers Liability Insurance for the states of New Jersey and Pennsylvania
- 2. Comprehensive Liability Insurance in the state of New Jersey

3. Massachusetts Statutory Automobile Liability Insurance

4. All other elements of exposure above the limits of liability specified under Retrospective Rating Plan D above.

Under this plan rates will be established in advance, and premiums will be developed by application of these rates to actual earned exposures. Rate levels will be keyed to the attainment of a desired dollar total within the framework of existing rate regulatory laws.

# Summary

This proposal involves an unusual element—at no point does it identify a purchase price. Certain figures are presented as indications, but the absence of

an over-all price tag may require explanation.

Because of the importance of rate modifications in the development of initial premium charges and because of the many jurisdictions concerned in your case, the fact that their modifications are not yet published is of major importance. Obviously, any guesswork could produce deviations in terms of thousands of dollars. We hesitate to make such guesses.

In short, we are urging you to adopt a principle, the value of which we

believe we have demonstrated.

### GLOBAL CHEMICAL COMPANY

# Control of Research Expenditures

This case presents the difficult problems of developing methods of control of research expenditures in a company and measuring the results of such expenditures.

The Global Chemical Company was a medium-size concern specializing in the development of products and processes both for itself and for other firms in the chemical industry. In some respects the company was a "job-shop" research laboratory for the chemical trade, and frequent requests were made to Global by other members of the industry for the development of a special product or process. The company maintained offices in the major cities throughout the United States. It also operated chemical plants in Amarillo, Texas; San Bernardino, California; Philadelphia, Pennsylvania; and Dubuque, Iowa, in which it produced a standard line of chemical products. Since the company's progress depended to a large extent upon its ability to tailor products and processes to meet the specific needs of customers, and to develop new products for its own organization, the research division was generally considered one of the most important operations of the company, and, as such, occupied a proportionate share of management's attention.

In the spring of 1955 the Global management was reviewing the company's research activities with a view toward possible improvements in its control over research expenditures and in the appraisal of the profitability of its research program.

# Research Facility

The facilities of the research division of the Global Chemical Company consisted of a group of buildings located on the outskirts of Baltimore, Maryland. The "central" plant housed most of the executive staff and office personnel. Department heads also had their laboratories in this building, as did the chemical division head. A second building housed the remaining scientific laboratories, while

a third housed pilot plant operations. Engineering development was carried on in a fourth building located adjacent to the other three facilities.

#### Research Personnel

Global employed over 200 research personnel in all: 90 were directly connected with the research work, 33 were service personnel, 60 were clerical workers, and the remaining 20 comprised the executive group.

### Size of Research Program

Some idea of the magnitude of Global's research activities may be gained from the fact that, for the three years 1952, 1953, and 1954, research expenditures ranged from \$1.5 million to \$1.8 million. Although the annual research expenditures had consistently amounted to about 3 per cent of sales, there was no company policy relating the amount of such outlays to expected sales revenues.

## **Research Policy**

The general direction of the company's research activities came within the purview of its board of directors, who established broad company research policy and exercised general control over the program. In fact, the board had established a standing committee whose purpose was to maintain close contact with the research program through continued review and appraisal of the conduct and results of research operations. This committee, which consisted of the board chairman, the president, executive vice-president, director of research, and the chairman of the research committee, provided whatever guidance and direction it considered necessary to insure an effective research operation. Typical of the kinds of questions on which the standing committee offered guidance to the research division were these:

- 1. The question as to whether emphasis should be placed on the development of new products or on the improvement of existing ones.
- 2. The determination of long-range research programs; that is, what particular fields of research might prove profitable in the long run?

3. The question of when to intensify efforts on a particular product and when to drop products for which the prospects appeared dim

peared dim.

4. The disposition of new products developed—for example, the appraisal of the sales potential of new products, the decision as to when a new item was ready to be turned over to an operating division for production.

5. The question of the potentials of by-products arising from new

processes or products.

## **Research Organization**

The division of research was headed by the director of research whose staff consisted of a controller, a purchasing agent, and a number of department heads—one for each of the types of research shown in Exhibit 1 (the Administration and Business department was in the charge of the research division controller).

## **Budgeting Procedure**

The budgeting procedure at Global started at these department levels. Each department head prepared a budget using as a basis for his estimates the expenditures expected to be required during the budget period for projects already in progress and for those expected to be started during the year. In making these estimates the department head was guided by the advice and direction of the director of research who, in addition to his own thoughts, reflected the opinions and expectations of the standing research committee discussed earlier. The assistance of the research controller and his office was also available to department heads in the preparation of their budgets.

Each departmental budget was broken down according to two detailed classifications: (1) by type of expense, as shown in Exhibit 3, and (2) by project, as illustrated in Exhibit 2. When the departmental budgets were completed, the research controller then combined them into a "master" budget, for research divisions as a whole, which also was broken down by two classifications of detail: (1) by type of expense, as shown in Exhibit 3, and (2) by department, as shown in Exhibit 1.

The master budget, after review by the company controller, was then submitted to the chairman of the research committee for pres-

#### EXHIBIT I

## Analysis of Research Appropriation Program for 1954–1955

Engineering research	\$	300,000
Organic chemical research		250,000
Inorganic chemical research		110,000
Maintenance services for research plant		375,000
Product research		125,000
Physics research		100,000
Pilot plant research		100,000
New product research		115,000
Administrative and business department		95,000
Total research appropriation	\$1	,570,000

entation to the research committee and board of directors for approval and fund appropriations.

### **Control of Expenditures**

Once the budgeting and appropriations procedure was completed in the Global company, close control was exercised in assuring that research expenditures were made in accordance with budget authorizations. Because the carrying out of a research project consisted primarily of the efficient utilization of research personnel, especially close watch was maintained over labor costs. No department head was allowed to commence a new project unless he could demonstrate that sufficient time for research was available to assure reasonable progress. Salary increases, and increases or decreases in research personnel, were made only after a careful analysis of the effects of the change on the division budget and on departmental budgets.

Research Division—Engineering Research Department
Estimated Expenditures by Projects

	Number	Estimate 1954–1955					
Title of Project		Total	Overhead	Total Direct	Labor	All Other Direct	
Water Installation Improvement (No Project in 1953–1954)	342	\$18,352	\$8,300	\$10,052	\$8,000	\$2,052	

#### EXHIBIT 3

#### Research Division Expense-Budget, 1954-1955

Engineering Research Department Control

		Contro	ol		
	Effective Monthly Salary Payroll as of March 1, 1954	Budget 1954–1955		Budget 1953–1954	Actual 8 Months 1953–1954
TOTAL EXPENSE-NET		\$	\$	\$	\$
Income Credits Expense Transfers					
Total (excluding Income Credits)					
Executive Labor	(\$)				
Superv. and Clerical Labor	(\$)				
Shop Direct Labor	(\$)				
Research Labor	(\$)				
Service Labor	(\$)				
Overtime Salary Pay	,				

Power, Light, and Heat Maint. Material, and Service Raw Materials Operating Supplies Suggestion Awards Traveling and Expense Auto Depreciation and Insurance Auto Operating Expense Auto Taxes

Office Operating Expense Office Operating Appliances Dues, Subscriptions, and Memberships Telephone and Telegraph Professional Services Storage and Handling Expense Advertising (Publications) Payroll Taxes and Ret. Benefits Surveys Unclassified Taxes Insurance Premiums and Service Depreciation

Rents and Royalties

The approval of the director of research was required for any addition of personnel to the research staff. Although the department heads could approve any requisitions for materials up to \$250, anything above that figure had to be approved by the research controller, and requisitions amounting to over \$500 had to be approved by the director of research. Finally, all requests for materials in excess of \$1,000 and all maintenance and capital expenditures required the approval of the company treasurer.

## **Expense Reporting**

A wide variety of reports was employed by the Global company in its efforts to control the cost of its research operations. Each department head received a monthly report showing expenses, by project, for the month, for the year to date, and for the life of the project. Exhibit 4 illustrates the form of this report. The labor costs on this monthly report were supported by a detailed breakdown showing the time spent by each research worker on each project.

A monthly report of actual versus budgeted expenses was also sent to the research committee along with a letter of transmittal explaining any significant differences between budgeted and actual costs. A monthly summary of expenses by accounts (as in Exhibit 3) and for each department was also made to the director of research and the research committee. Exhibit 5 illustrates the form of this report (account titles to be supplied in columns). Quarterly reports similar to the monthly reports were also submitted to the research committee, and with the quarterly report there was a written review, prepared by the director of research, describing progress to date and appraising the future prospects of each project. On the basis of this review the director of research and the research committee decided for each project whether it should be dropped, continued as planned, or modified in any respect.

In addition to these monthly and quarterly reports, the research controller prepared interim reports for department heads when the expenses for a particular project had reached the budgeted limit or where it appeared that a project might run over its budget. On the basis of this report the department head might request additional appropriation to continue the study if further work appeared warranted by the results already accomplished.

EXHIBIT 4

Monthly Report of Project by Project

PRIOR FISCAL VEARS   PRIOR F		CUMULATIVE FROM INCEPTION	CUMULATIVE CURRENT YEAR	TOTAL MONTH EXPENSE	OVERHEAD	TOTAL DIRECT COSTS	LABOR	MATERIAL AND SUPPLIES	SHOP WORK AND ASSAYS	OTHER	
CURRENT FISCAL YEAR  CURRENT FISCAL YEAR  CURRENT CURRENT FISCAL YEAR  CURRENT FISCAL YEAR  CURRENT FISCAL YEAR	FISCAL YEAR				PR	HOR FISCAL YE	ARS				
META  CURRENT FISCAL YEAR  CURRENT FISCAL YEAR  FINALE  CURRENT FISCAL YEAR  CURRENT FISCAL Y	PRIOR TO			-							
REA CURRENT FISCAL YEAR  REA REA REA REAR REAR REAR REAR REA	1943 - 44										
EEA CURRENT FISCAL VEAR  EAC CURRENT FISCAL VE	1944 - 45										
CURRENT FISCAL VEAR  CURRENT FISCAL VEAR  EXA  REA  NO  CURRENT  COURRENT  C	1945 - 46										
EER CURRENT FISCAL YEAR  REA REA REA REAR REAR REAL REAL	1946 - 47										
CURRENT FISCAL YEAR	1947 - 48										
CURRENT FISCAL YEAR   REA	1948 - 49			•							,
REA	MONTH				้อ	RRENT FISCAL	YEAR				
REA	JUNE										
No.	JULY										
No.	AUGUST										
No.	SEPTEMBER										
NAV	OCTOBER										
PV	NOVEMBER										
NAY  CUURETT  CUURET  CUURETT  CUURETT  CUURETT  CUURETT  CUURETT  CUURETT  CUURETT	DECEMBER										
S CURRET FAR	JANUARY										
CUGREY  CUGREY  ESTIMATE  FROMET  COMPREY  ESTIMATE  FROMET  COMPREY  FROMET	FEBRUARY										
CUGREYT CYCAR ESTIMATE PROJECT COMBENT VEAR	MARCH										
CUGREYT CYCAR ESTIMATE PROJECT CUMRENT YEAR	APRIL										
CUBREKT CUBREKT EVERA EVERA EVERA PROJECT CUBREKT VEAR	MAY										
CUBRENT ESTIMATE STIMATE STANATE CUMMENT YEAR PROCESSMENT PROCESSM	TOTALS										
		7					53	URRENT YEAR STIMATE		TOTAL	
							ă	POJECT			
MARTHE							ช	JRRENT YEAR		PROJECT NO.	
							3	1400			

# EXHIBIT 5

# Monthly Expense Report to Department Heads

,	CURRENT Y	EAR			
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				MONTHLY	
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JANU					
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APRI			ļ		
MAY				-	
		L	<del></del>	L	
				CUMULATIVE	
MONTH	BUDGET				-
OF	CURRENT				
JUNE	LAST YR.				
2 MO.	BUDGET			<b></b>	
THRU JULY 31	LAST YR.		<b></b>		
3 MO.	BUDGET				<del> </del>
THRU	CURRENT				
AUG. 31	LAST YR.				
4 MO.	BUDGET				
THRU	CURRENT				
5 MO.	LAST YR. BUDGET				
THRU	CURRENT				
OCT. 31	LAST YR.				
6 MO.	BUDGET				
THRU	CURRENT				
NOV. 30	LAST YR.				
7 MO. THRU	BUDGET				<u> </u>
DEC. 31	LAST YR.		•		<del> </del>
8 MO.	BUDGET				
THRU	CURRENT				
JAN. 31	LAST YR.				
9 MO.	BUDGET				
THRU FEB. 31	CURRENT LAST YR.				
10 MO.	BUDGET				
THRU	CURRENT				
	LAST YR.				
11 MO.	BUDGET				
THRU	CURRENT				
APR. 30	LAST YR.				
12 MO. THRU	BUDGET				
	CURRENT LAST YR,				
3.2.2.1.01	~4W 1 11th		L		

At the end of the year, the controller prepared annual reports showing comparisons of budgeted against actual expenses along with the actual expenses for the previous year and the budget for the ensuing one. These reports included a review of the last year's operations with explanations of variations of actual from budget, both by type of expense and by project.

In an effort to tie research in more closely with the actual production of its products, the Global management was, in 1955, experimenting with a new idea for guidance and control of its research program. Previously the costs of the research division had not been distributed either to product costs or to the operating divisions of the company. The division's expenses were, instead, shown in the company's income statement as a separate deduction. This practice had been based partially upon the premise that research benefited the company as a whole and partially upon the fear that the distribution of research expenses among operating divisions might cause the company's research program to be unduly influenced by the special interests of divisional managements. Since such distribution would result in lower short-run divisional profit figures, there might be a tendency for division heads to oppose research expenditures that, in the longer run, would prove profitable to the company as a whole. The research director was aware of this apparent conflict of interests and, since he valued the cooperation of operating division heads very highly, he was eager to avoid any change that might antagonize them.

The board of directors, however, was concerned about the over-all profitability of Global's research program. Although the directors knew that a certain portion of the company's research expenditures were directed to basic research and could not be readily prorated to specific products or divisions, it felt that there were some types of research that could be attributed to products or divisions. There was some feeling among the board members that if each product was made to bear its share of allocable research costs, the company would stand a better chance of a profitable research operation over-all than it now stood. The board felt, for example, that product development costs and the cost of pilot plant operations might well be distributed to products or producing divisions. Due to the significance of the research activity to the company's profitability and progress, how-

ever, the board was extremely apprehensive lest it take action that would in any respect jeopardize the effectiveness of its research operations.

Does Global Chemical Company exercise effective control over its research expenditures?

Do you think Global's research expenditures should be allocated to products and/or divisions?

### THE SOUTH AMERICAN COFFEE COMPANY

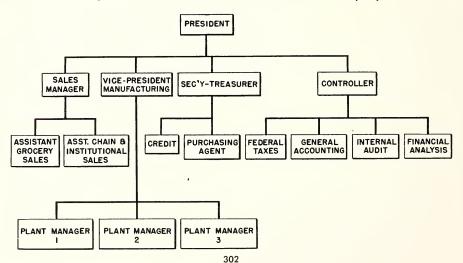
Data for Management Use

In this case the problem of measuring performance both for specific operating units and for functional areas, such as purchasing, is raised.

The South American Coffee Company sold its own brands of coffee throughout the Midwest. Stock of the company, which was founded in 1903, was closely held by members of the family of the founder. The president and secretary-treasurer were members of the stock-owning family and other management personnel had no stock interest. An organization chart of the company is shown in Exhibit 1.

Sales policies and direction of the company were handled from the home office in Cincinnati, Ohio, and all salesmen reported to the sales manager through two assistants. The sales manager and the president assumed responsibility for advertising and promotion

**EXHIBIT 1**Organization of the South American Coffee Company



work. Roasting, grinding, and packaging of coffee was under the direction of the vice-president of manufacturing, whose office was in Cincinnati.

The company operated three roasting plants throughout the Midwest. Each plant operated on a profit and loss responsibility and the plant manager was paid a bonus on the basis of a per cent of his gross profit. Monthly profit and loss statements were prepared for each plant by the home office. The form of the profit and loss statement used is shown in Exhibit 2. Exhibit 3 shows the form of the company monthly income statement. Each month the plant manager was given a production schedule for the current month and a tentative schedule for the next succeeding month. Deliveries were made as directed by the home office.

#### **EXHIBIT 2**

# Operating Statement Plant No. 1—April, 1952

Net Sales (Shipments at billing prices)		 \$74,462
Less: Cost of Sales		
Green Coffee—at contract cost		 \$37,366
Labor	\$3,822	
Fuel	2,478	
Manufacturing Expenses	3,362	 9,662
Packaging:		
Container	\$8,462	
Packing Carton	914	
Labor	1,226	
	2,544	 13,146
Total Manufacturing Cost		 \$60,174
Gross Profit on Sales		 \$14,288

All financial statements were prepared in the home office, and billing, credit, and collection were done there. Each plant had a small accounting office at which all manufacturing costs were recorded. Plant payrolls were prepared at the plant. Green coffee costs were supplied each plant, as indicated later, on a lot basis.

The procurement of green coffee for the roasting operations of the South American Coffee Company was handled by a separate purchasing unit of the company. Because of the specialized problems and the need for constant contact with coffee brokers, the unit was

EXHIBIT 3
Income Statement—April, 1952

	$rac{Plants}{1 \ 2 \ 3}$	Green Coffee	Total
Net Sales	\$74,462	\$12,374	\$285,640
Cost of Sales Green Coffee Roasting and Grinding Packaging Purchasing Department	37,366 9,662 13,146	11,127	142,168 29,944 60,041 7,840
	\$60,174		\$239,993
Gross Profit	\$14,288	\$ 247	\$ 45,647
Selling Expenses: Commissions Salaries Advertising Sales Travel Other  General Expenses: Salaries Bonuses to Plant Mgrs. Printing and Stationery Dues and Subscriptions Depreciation on F. & F. Other			
Other			
Net Income-before Federal Income	e Taxes		
Provision for Federal Income Taxes Net Income—to Surplus			

located in the section of New York City where the green coffee business was concentrated. The purchasing unit operated on an autonomous basis accounting-wise, keeping all records and handling all financial transactions pertaining to purchasing, sales to outsiders, and transfer to three company-operated roasting plants.

The primary function of the purchasing unit was to have available for the roasting plants the variety of green coffees necessary to produce the blends which were to be roasted, packed, and sold to customers. This necessitated dealing in forty types and grades of coffee, which came from tropical countries all over the world.

Based on estimated sales budgets, purchase commitments were made which would provide for delivery in from three to fifteen months from the date that contracts for purchase were made. Although it was possible to purchase from local brokers for immediate delivery, such purchases usually were more costly than purchases made for delivery in the country of origin and, hence, these "spot" purchases were kept to a minimum. A most important factor in the situation was the market "know-how" of the purchasing executives, who had to judge whether the market trend was apt to be up or down and had to make their commitments accordingly.

The result of all this was that the green coffee purchasing unit was buying a range of coffees for advance delivery at various dates. At the time of actual delivery, the sales of the company's coffees might not have been going as anticipated when the purchase commitment had been made. The difference between actual deliveries and current requirements was handled through "spot" sales or purchase transactions in green coffee with outside brokers or other coffee

As an example, the commitments of the company for Santos No. 4 (a grade of Brazilian coffee) might call for deliveries in the month of May of 20,000 bags (of 132 pounds each). These deliveries would be made under fifty contracts which had been executed at varying prices from three to twelve months before the month of delivery. An unseasonal hot spell at the end of April had brought a slump in coffee sales, and it then developed that the company plants would require no more than 16,000 bags to meet their May requirements. The green coffee purchasing unit therefore had to decide whether to store the surplus in outside storage facilities (which would increase the cost) or to sell it on the open market. This example was typical of the normal operation.

Generally speaking, the large volume of the company permitted it to buy favorably and to realize a normal brokerage and trading profit when selling in smaller lots to small roasting companies. Hence, the usual policy was to make purchase commitments on a basis of maximum requirements—the usual result was that there was a surplus to be sold on a "spot" basis.

In accounting for coffee purchases, a separate cost record was maintained for each purchase contract. This record was charged with payments for coffee purchased, with shipping charges, import expenses, and similar items, with the result that net cost per bag was developed for each purchase. Thus, the fifty deliveries of Santos No. 4 coffee cited in the example would come into inventory at fifty separate costs. The established policy was to treat each contract on an individual basis. When green coffee was shipped to a plant, charge was made for the cost represented by the contracts that covered that particular shipment of coffee, with no element of profit or loss. When green coffee was sold to outsiders, the sales were likewise costed on a specific contract basis; there was resulting development of profit or loss on these transactions.

The operating cost of running the purchasing unit was transferred in total to the central office, where it was recorded as an element in

the general cost of coffee sales.

For the past several years there has been some dissatisfaction on the part of plant managers with the method of computing gross profit subject to bonuses. This has finally led to a request from the president to the controller to study the whole method of reporting on results of plant operations and the purchasing operation.

Write a brief analysis, directed to the controller, of any changes you would propose in the present monthly reporting procedure, giving reasons. You should base your analysis on the assumption that the bonus to plant managers will be retained.

#### ALBERTSON STEEL COMPANY

## Cash Procedure and Control

In this case the problem of effective cash control for a decentralized company is examined. The question of viewing forms and procedures as a control device is balanced against consideration of decentralized management's subjective judgments.

The Albertson Steel Company was a large steel producer and marketer with home offices in Chicago, Illinois. The firm had plants in three states, and selling offices all over the world. In addition, Albertson maintained warehouses in principal cities throughout the United States. Their function was to service the local contractors and building materials firms.

Albertson was organized on a geographic basis, and was divided into ten districts. Each district was in the charge of a divisional president who had the sole responsibility for his division, both for everyday decisions and for profits and losses. Long-range policies were directed from the home office in Chicago.

The divisional presidents reported directly to the president of the parent company. The president of the parent company reported to the chairman of the Board of Directors and the directors.

The president's staff consisted of vice-presidents in charge of sales, manufacturing, purchasing, and research, a treasurer, a secretary and general counsel, and a controller. These men were staff men who gave advice to the president and to their functional counterparts in the divisions. Each division president had a staff man whose job was similar to that of the central executives, except that division presidents did not have legal advisors, treasurers, or research department heads. These functional executives in the divisions were also staff men, and they reported to the president of the division. The functional relationship between home office and division was such that much cooperation and exchange of ideas occurred, and most suggestions were accepted by the divisions. However, there was no

compulsion on the part of the division executive to take the advice the Chicago office gave.

Albertson did three basic types of selling. The company sold to the large commercial trade; to construction companies; and, through its warehouses, to smaller users. Each type of sale was handled differently accounting-wise, although the branch (usually a sales office under the supervision of one of the divisions) was responsible for the collection on the sale. All receivables were handled by the office that did the selling of the merchandise.

Sales to large commercial users were similar to most such transactions: the merchandise was delivered, a receivable set upon the books of account by Albertson, and payment was made according to terms of the trade. In this type of sale Albertson carried the receivable on its books for a length of time.

Sales to construction companies were made on a "sight draft" basis, whereby the purchaser, in order to take possession of the goods, first had to pay for them. His payment to the bank entitled him to a release which he then presented to the railroad or warehouse in order to gain the use of the goods.

Sales by the warehouses were similar to those made by the branches, with but one exception; the cash from such sales was deposited every day so that there was no ending balance of cash in the warehouse office's possession, other than regular petty cash funds.

These three types of sales dictated the cash procedure for the branches and warehouses. Collections made by branch offices on sales to large commercial users were deposited in an account in a bank in their city. This account, although opened by the home office, was established as a divisional bank account, and could only be drawn upon by authorized divisional officers and/or employees. The account also could be closed only by the home office.

When branches sold to contractors, a different procedure was followed because such sales were made on a "sight draft" basis. Albertson availed itself of a service rendered by The National City Bank of New York, known as the "Transcontinental Collection System" for the collection of sight drafts. This system divided the United States into certain territorial districts based upon the general flow of money within those areas. The financial centers within those districts were designated as "concentration centers," for remittances were "concentrated" in principal banks in those cities from outlying banks.

All concentration banks were linked to National City by private wire facilities. The drafts that were drawn by the office from which shipment is made were forwarded direct to a bank designated by the customer, with documents attached entitling the customer to obtain the goods. Upon receipt of the draft at the customer's bank, the customer was advised, and when he paid the draft, the documents were released to him. The funds were then transferred by the bank, in accordance with instructions appearing on the face of the draft, to a nearby concentration center bank where they were credited to a collection account maintained in such bank by the home office of Albertson. Copies of all drafts drawn were sent by the shipping office to the concentration bank. As the proceeds of the drafts were received at the concentration center bank and credited to the account of Albertson, the draft copies were stamped paid and returned to the branch office where they had been drawn. Upon receipt of the draft copies marked paid the customer's account was credited and the divisional office was advised of the total amounts deposited each day in each concentration center bank. To facilitate the collection of the funds and make them available immediately to Albertson, the customer's bank was requested to remit to the concentration center bank by draft drawn on a bank located in the same city as the concentration center bank. As a rule, concentration centers were so located that it required no more than overnight mail service for a letter to arrive at the center from banks through which the drafts were collected. Advice of daily deposits and closing balances in the Albertson account at the various concentration center banks was wired to The National City Bank where the draft collections were summarized by divisions, and the summary, together with advice of the closing balances in each of the concentration center banks, was wired daily to the Albertson home office. Under this system Albertson had the use of the funds from collection of drafts within twenty-four hours after the time such funds were deposited in the various concentration center banks.

Cash receipts from warehouse sales and branch office collections were deposited daily in divisional depository bank accounts carried locally in the name of the division operating the warehouse or branch office.

Daily reports of all collections, including both local collections deposited in divisional bank accounts and draft collections deposited

to the credit of Albertson in concentration center banks, were prepared by each divisional office for forwarding to the home office of Albertson. These reports also showed the total of daily disbursements from divisional depository accounts and the balances at the close of business each day in all such accounts. A sample of the form of this daily report is given in Exhibit 1, from which the following specific examples are taken to illustrate the cash procedure of Albertson. The account at the Trust Company of Georgia represented the division headquarter's depository bank account, and the other nine accounts were branch or warehouse depository accounts from which only the divisional headquarters could withdraw funds. Funds for the use of the branches or warehouses, or for use of the division headquarters office for payment of operating expenses, were maintained in separate operating accounts. Funds must be transferred to the operating accounts by the divisional headquarters office, or by the home office of Albertson upon specific request from division executives. On June 10, 1950, the Savannah branch had an opening balance of \$16,350. Deposits during the day from local sales or collections amounted to \$5,120. Disbursements by the division headquarters to an operating bank account for the use of the division amounted to \$5,000 and, in addition, \$3,000 was transferred to the division headquarters depository account in the Trust Company of Georgia, leaving a closing balance of \$13,470. Transfers for the day from the division depository accounts to the home office depository account amounted to \$75,000, advice of which was wired to the home office. Total deposits for the day in various depository accounts of the Southern Division were \$61,426, of which \$16,500 was used for operating purposes. The closing balances in the ten depository accounts of the division amounted to \$230,654. The total of draft collections for the day in the Southern Division was \$8,120, which, as noted, was deposited to the credit of Albertson at the First National Bank of Atlanta.

The home office also used Exhibit 1 as the basis for its check and control over the balances maintained by the divisions. In order to control the total amounts in the division accounts, Albertson used the form shown in Exhibit 2. This form was posted every day and was completely up to date. It showed the total funds in all division depository accounts by divisional locations. It also showed the previous months' average daily balance, and, at the end of the cur-

rent month, it contained the average daily balance for that month. The treasurer and assistant treasurer of Albertson were familiar with these figures and so could establish effective control by examining them each day. The total balance in Exhibit 1 and the division balance in Exhibit 2 would naturally be the same.

The central office maintained control over its own bank accounts through the Daily Cash Report shown in Exhibit 3, consisting of two parts, one showing the flow of funds and the other the location of funds at the close of the day. In Section I the opening balance is presented, all receipts and disbursements shown, and the closing balance indicated. The receipts from the divisions would coincide with the disbursements of the division headquarters' bank shown in Exhibit 1 when the only withdrawal by the division has been in favor of the home office. Divisions remitted to the home office by transferring funds from their headquarters' accounts to the Albertson depository account in the same or nearby bank.

Section II of the report-Location of Funds-shows the cash balances in the depository accounts maintained by the home office. This report also shows the amount and disposition of borrowings, both from banks and through commercial paper loans.

Bank accounts maintained for use of the home office were divided between depository accounts and operating accounts. Depository accounts were the principal reservoir in which available cash balances of the company were carried, and from which amounts required for operating purposes were withdrawn. A separate or specific type of depository account were the collection accounts previously referred to, maintained in concentration center banks for the purpose of receiving proceeds of drafts covering shipments made by the various divisions.

Operating accounts of Albertson were divided into three classifications—the first type designated as "Operating Account" included those accounts in which amounts were deposited daily for withdrawal in payment of administrative expenses of the home office, such as legal fees, printing expenses, and miscellaneous office operating expenses and supplies. A second type of operating account was the "Payroll Account," which was operated on an imprest basis, the exact amount of each payroll being deposited in the account at the time wage and salary checks were drawn. The third type of operating account was the "Dividend Account," separate accounts being maintained for the payment of Common and Preferred dividends. These accounts were also maintained on an imprest basis, the amounts for dividends declared being deposited at the time dividend checks were prepared for mailing to stockholders.

Section II of the report designates Location of Funds. (Exhibit 3 shows the daily cash balances in each depository and collection account maintained for the use of the home office.) In the summary showing bank totals (column 3) the balances in various operating accounts rounded out to the nearest full thousand dollars are also included. Balances in Payroll and Dividend accounts are omitted from the report because they were operated on an imprest basis. For example, at the Continental Illinois National Bank and Trust Company of Chicago the balance in the Depository Account is \$190,032.02. The balance in the Collection Account is \$120,915.86, and the balance in the Operating Account is \$52,000.00. (Figure not shown on report.) Reference to this same section of the report will indicate that operating accounts were also maintained by Albertson at the First National Bank of Minneapolis, the First National Bank of New York, and others.

The home office control over funds was exercised by the treasurer and his assistant. It was their responsibility to ascertain that the cash requirements of the company and of the divisions were met. They had the sole responsibility and authority for negotiating loans and for borrowing through commercial paper houses. They had direct control over the 32 depository accounts of the head office and were responsible for the company's relations with all 196 banks in which the company maintained either head office or divisional accounts.

The company was acutely aware of its relations with the banks. It dealt with a great number of bankers. It borrowed great sums of money—up to \$60,000,000 per year to finance inventory seasonals. It used the banks for collections, for credit, and many other types of information.

Many company executives felt that good bank relations were of the greatest importance. Actually, Albertson was in so strong a financial position that, under normal conditions, it had no difficulty in obtaining loans: it had to ration them between its depository banks to keep them satisfied. The wisdom of this policy had been questioned, but

the divisions and members of the home office felt strongly on this point.

Even the commercial paper, of 30, 60, 90, or 120-day duration, had to be parceled out. The company, because of its strong financial position, was able to borrow on an unsecured basis for seasonal loans at rates quoted by its bankers for prime risks. Most banks quoted Albertson the same prime rate, but even if they did not, Albertson would not substantially change the distribution of its loans. The rate obtained by Albertson on commercial paper fluctuated with the market. Although it was usually cheaper than bank rates, Albertson did not use this method of financing exclusively. The paper it did issue, constituting approximately thirty per cent to forty per cent of its borrowings, was sold through brokers who had exclusive distribution rights within certain geographical territories. Such paper was sold to over 800 banks throughout the country. In this way, Albertson felt that it was accomplishing a public relations job with these small banks. The main problem in borrowing was to get an equitable distribution of funds which would retain the good will of the bankers. The banks purportedly kept the Albertson name to the forefront in the financial and trading circles in which the bankers were influential.

The prevailing cash control system placed the responsibility for determining the adequacy of cash balances in divisional accounts in the hands of the division. The division controller estimated his daily needs at various branches and kept that much cash. If daily cash balances of the division exceeded cash requirements, the division was supposed to, and did, remit this amount to the home office. Actually, less than 25 per cent of the company cash resided in the divisions.

The major reason for division of responsibility for the funds was that the division, being closer to the actual operation, would be better able to determine its own needs. There were no formal rulings and no standards by which divisions were supposed to judge their needs. The relationship between home and division office was close and no friction occurred. The divisions were supposed to remit excess cash amounts to the home office. On the other hand, the home office rarely refused a request for funds, although it would scrutinize such requests, and even question them once in a while. The treasurer wrote few letters to the divisions asking for funds, but when he did,

the response was usually favorable. One reason that divisions like to maintain balances reasonably larger than needed amounts, was to keep their banker good will.

Divisions also had the responsibility, although they did consult with the home office, of determining what size the minimum balance should be in any particular establishment where it banked. This was also true of banks servicing the warehouses in the divisional confines. The decision was usually based upon the factor of service rendered by the bank to the company in the form of credit reports, loan balances, and activity of the account. Albertson had never computed the cost, if any, of the money tied up in this way.

Exhibit 4 shows the average divisional balances by month from June, 1949, to March, 1950. Exhibit 5 shows the cash balances by divisions at the end of each month for the period June, 1948, to January, 1950.

Signature

Prepared by .....

EXHIBIT 1

# Statement of Bank Balances—Southern Division

hether advice teel Company Not Wired Not Wired	Closing Balance	\$ 13,470 37,870 6,660 6,971 5,927 9,217 7,799 37,667 7,593 97,480
June 10, 195 (V) below w o Albertson S	Bank Transfers	-\$ 3,000 - 7,000 - 5,000 - 15,000 - 15,000 - 15,000 - 7,000 - 25,000 - 12,000 \ 97,000 \ -75,000 - \$75,000
Date Check wired t Wired Wired	Disbursements	\$ 5,000 
\$75,000 8,120	Deposits	\$ 5,120 3,570 1,785 9,654 3,892 10,354 7,864 12,310 5,307 1,570 \$61,426
orgia * Manta * )	Opening Balance	\$ 16,350 41,300 9,875 12,317 10,035 17,863 6,935 50,357 14,286 81,410 \$260,728
Trust Company of Georgia * First National Bank, Atlanta * (concentration bank)	Name of Bank	Georgia National First of Miami Exchange Trust Temessee State South Carolina Trust Florida Trust Capital City Alabama Trust Mobile City Trust Company of Ga.
Albertson Steel Co. Deposits Today	City	Savannah Miami Tampa Nashville Charleston Jacksonville Columbia Birmingham Mobile

\* Parent Company Accounts.

EXHIBIT 2

Summary of Daily Balances of Divisional Depository Accounts (figures to nearest thousand)

OHIO	89								73																					
UTAH	95								113																					
PURCH.	221								218																					
SPEC.STEEL	30								35																					
PENNSYLVANIA	190								193																					
CANADA, LTD.	5								7																					
SOUTHERN	225								231																					
WESTERN	801								798																					
CENTRAL	750								760																					
EASTERN	4ó0								7425																					
TOTAL	2,845								2,903																					
Prev.	Aver.	-10	, ~	5	9	7	ω	6	10	117	12	13	14	15	16	17	18	139	50	21	22	23	54	25	56	27	28	29	30	31

# EXHIBIT 3

# Section I—Daily Cash Report

6272	G	0-1	4	49		2:30 р	.м.	Date	Wednes	day, June 10, 194	9
OPENING C	Cash	BALA	NCI	в Вко	иснт Го	DRWARD .				\$7,640,637.0	0
Receipts T	oday	7									
Eastern D Canada L'	ivisi	on							4,420.59		
Southern I									5,000.00		
Purchasing	De	partn	ent					1	1,210.11		
Central Di Ohio Divis									4,423.66		
Western D									1,613.01		
Pennsylvan	nia D	Divisio	n .					42	5,030.00		
Utah Divis									92.40		
Special Ste									29.59		
Miscellane	ous						• • • •	10	7,403.99		
Collection	Acc	ounts						36'	7,405.04		
Notes Paya									_		
Total Re	eceip	ts To	day							1,776,628.39	)
Total Cash	to A	Accou	nt F	or						\$9,417,265.39	)
Disburseme	ents	Toda	y								
Advances t	0:										
Eastern Di									_		
Canada L									-		
Southern I									- 0.48.00		
Purchasing Central Di									5,048.00		
Ohio Divis									J,032.00 —		
Pennsylvan									_		
Utah Divis									0,016.00		
Western D									5,016.00		
Special Ste									0,016.00		
Home Office	е	• • • •						100	0,016.00		
Notes Paya	ble							75	5,000.00		
Miscellaneo									1,198.06		
Total Di	sbur	semer	nts I	Γoday						1,066,342.06	3
CLOSING C	ASH	Bala	NCE	CAR	RIED FO	RWARD .				\$8,350,923.33	3
Increase or	De	crease	fro	om Pı	revious	Close				\$ 710,286.33	}

# EXHIBIT 3 (continued)

Section II—Location of Funds

Location of Funds	Bank Name	Acct. Type	N	otes Payable	Cash Control Balances	Bank Totals Including Oper. Accts.
Minneapolis	First National Northwestern Natl	Dep. . Dep. Col.	\$	300,000.00 300,000.00	\$ 414,149.93 332,053.54	\$ 470,149.93 383,599.09
Chicago	Continental Ill.	Dep.		300,000.00	51,545.55 190,032.02 120,915.86	362,947.88
	First National	Dep. Col.		300,000.00	778,921.22 137,864.96	916,786.18
New York	Bankers Trust	Dep.		300,000.00	205,243.50	
	Chase National	Dep.		300,000.00	170,166.17	
	Chemical Bk. & Tr			200,000.00	113,486.92	
	Corn Exchange	Dep.		200,000.00	105,408.19	
	First National	Dep.		400,000.00	1,340,712.88	1,384,712.88
	Guaranty Trust Co			300,000.00	132,093.94	
	J. P. Morgan	Dep.		300,000.00	102,236.85	
	National City	Dep.		300,000.00	209,946.84	393,217.06
		Col.			183,270.22	
	New York Trust	Dep.		200,000.00	163,030.69	1
Atlanta	First National	Col.		100,000.00	213,353.53	
	Fulton National	Dep.		100,000.00	186,527.41	
	Trust Co. of Ga.	Dep.		100,000.00	182,351.54	
Boston	First National	Dep.		100,000.00	111,839.38	
	Second National	Dep.		100,000.00	124,272.84	
Buffalo	M. & T. Trust Co.			400,000.00	162,123.49	
Cleveland	Cleveland Trust	Col.			44,215.51	
	National City Ban				93,059.74	
Dallas	Republic National	Col.			77,775.88	241.050.42
Detroit	Nat'l Bank of Det			200,000.00	160,309.71	241,970.42
		Col.			81,660.71	
Indianapolis	Indiana National	Dep.		****	25,022.00	150 045 05
Kansas City	Commerce Trust Co			100,000.00	127,421.62	159,647.97
		Col.		100 000 00	32,226.35	
	First National	Dep.		100,000.00	225,778.09	
Keokuk	Security State	Dep.		200 000 00	116,945.97	
Louisville	Citizens Fidelity	Dep.		200,000.00	52,946.99	202 020 02
Okla. City	First National	Dep.		200,000.00	268,420.10	363,926.93
D141 1 1 1 1	D 1 4 6	Col.		100 000 00	95,506.83	
Philadelphia	Pennsylvania Co.	Dep.		100,000.00	51,664.90	167 242 79
St. Louis	First National	Dep.		100,000.00	104,866.84	167,343.78
C	D. J. CA	Col.		200,000,00	62,476.94	420,398.07
San Francisco	Bank of America	Dep.		200,000.00	283,781.93	420,390.01
	Constant Et at Nat	Col.		200 000 00	136,616.14	
	Crocker First Nat.	Dep.		200,000.00	377,020.55	
гоТ	CAL U.S. BANKS		\$	6,000,000.00	\$8,149,264.27	
Toronto	Royal Bank of Can	. Den			1,496.49	
Winnipeg	Royal Bank of Can			600,000.00	97,749.75	
P~S	Bank of Montreal			710,000.00	102,412.82	
	TAL BANK BORROWIN Omercial Paper	igs	\$	7,310,000.00 6,500,000.00		
	-		,		40.000.000	
Gra	AND TOTALS		\$1	3,810,000.00	\$8,350,923.33	

EXHIBIT 4

Average Balance by Division by Month June, 1949—March, 1950 (in thousands)

Purchas- ing	124 239 182 234 264 271 160	153 134 355
Utah	222 206 205 143 114 142	141 86 110
Pennsyl- vania	141 - 146 - 136 - 130 - 129 - 114	114 151 114
Ohio	90 32 32 40 80 98	89 48 70
Southern	192 155 165 164 175 200 208	175 198 228
Western	177 227 222 186 234 240 221	205 199 199
Central	615 573 598 703 719 740 626	663 675 633
Spec. Steel	51 58 76 30 11 17	17 6 20
Eastern	227 195 240 260 304 272 225	225 255 223
Canada Ltd.	8 8 2 4 4 8 8 8 8 8 8 8 8 8 8 8 8 8 8 8	31 27 29
Total	1,875 1,859 1,957 1,973 2,048 2,174 1,838	1,813 1,779 1,981
	June July Aug. Sept. Oct. Nov. Dec.	Jan. Feb. Mar.

EXHIBIT 5

Cash Balance by Divisions at End of Month June, 1948—January, 1950 (in thousands)

	Utah	121	28	30	107	229	101	70	77	157	93	73	40	100	143	52	39	132	47	102	144
	Ohio	99	119	26	10	84	85	51	62	35	47	25	89	20	84	35	52	30	64	<del>2</del> 4	27
	Southern	926	490	833	631	969	588	765	683	777	484	464	366	284	334	226	279	396	287	252	297
	Spec. Steel	55	95	80	81	51	77	54	52	29	63	61	70	78	77	73	62	64	44	1	44
	Pennsyl- vania	195	218	206	227	197	177	186	192	185	168	174	79	155	163	145	140	148	81	165	146
	Western	1,778	1,279	861	1,092	206	938	877	840	790	934	949	647	705	971	772	925	883	395	655	317
	Central	973	945	1,025	849	689	985	192	758	1,081	223	609	729	526	623	687	169	1,043	771	869	947
-	Purchas- ing	409	958	521	200	435	294	284	166	127	206	311	222	259	930	513	718	569	594	389	421
	Eastern	798	338	099	683	492	724	764	678	634	470	502	608	447	326	447	517	661	609	580	630
	Canada Ltd.	89	-19	75	74	57	54	22	41	49	61	56	54	71	24	29	25	47	24	24	91
	Home Office	10,306	7,060	10,892	7,825	6,674	8,199	7,891	9,171	10,687	24,195	24,679	26,469	26,732	6,768	8,672	8.573	11,883	10,554	9,663	13,123
	Month	1948 June	July	Äug.	Sept.	Oct.	Nov.	Dec.	1949 Jan.	Feb.	Mar.	Apr.	May	Ime	July	Aug.	Sept.	Oct.	Nov.	Dec.	1950 Jan.

# THE WRIGHT KNIGHT COMPANY

#### Measures of Performance

This case deals with the problem of measuring divisional performance in a decentralized manufacturing company. It presents a list of factors which one company considers important in judging performance and raises the question of establishing yardsticks by which these factors might be measured.

The Wright Knight Company was one of the larger manufacturers of industrial products in the country. Sales were over \$400,000,000 annually, and profits after taxes had averaged \$20,000,000 per year for five years. Investment in fixed assets stated before provision for depreciation totaled about \$300,000,000.

For five years the company had been in the process of changing its organizational operation from one of centralized control by its home office to a decentralized operation. As a result of this change, the company then had forty-two departments reporting on a profit responsibility basis. These forty-two departments were grouped into five operation divisions, each headed by a company vice-president. The operating vice-presidents together with vice-presidents for finance, law, industrial relations, and research and development reported to the president.

#### The Problem

Over a number of years complaints had been voiced by various company executives that they did not know the criteria by which their performance was judged. Comments were voiced that it appeared some executives were promoted because of their social skills, color of eyes, etc. This feeling that criteria were not developed and made known for appraising performance was heightened by two company policy changes. First, the decision to decentralize, putting forty-two department managers and five operating division heads more or less on their own, and, second, the decision to pay extra

compensation to key men (including the forty-two department heads) on the basis of "good performance."

Early in 1953, the vice-president for finance asked his controller to study the problem of what criteria should be used in measuring performance at the department and division level. After a series of meetings, it was agreed that the approach the controller should take should be in the three following steps:

- 1. Define the factors in company operations which were considered important by the president and board of directors.
- 2. Determine how to measure these factors.
- 3. Set standards of performance.

Over the following months, representatives of the controller's staff worked toward identifying the factors that operating and staff executives thought to be important in the conduct of company operations. The result of this preliminary study was a list of six factors which company executives considered the most important. These factors were:

- 1. Profitability—return on investment
- 2. Share of the market
- 3. Plant efficiency
- 4. Research and development
- 5. Employee relations
- 6. Public responsibility

The six factors then had to be presented to the board for acceptance as the criteria representing all the most important facets of company operations.

The next step was to develop acceptable ways of measuring each of these factors. Some of the factors such as employee relations and public responsibility would require new imaginative attacks. Others, however, such as profitability, while appearing reasonably easy, had to be checked to see that the measure could not lead to improper inferences or appraisals of performance.

What do you think of the factors selected by the controller and operating heads? Would you add others?

How would you go about measuring performance in each of these areas?

# case 34

# HYDROCARBON PRODUCTS COMPANY, INC.

# Transfer Pricing

The Hydrocarbon case builds on the area introduced by the Wright Knight case. It is specifically concerned with a statement of company policy with respect to the setting of transfer prices at which divisions may bill other divisions of the same company for products in interdivisional sales. The question of transfer pricing is considered as it relates specifically to determining the return provided by various divisions on the assets they employ.

On December 9, 1954, the president of the Hydrocarbon Products Company, Inc., which had sales of around \$75 million, announced that on January 1, 1955, the company would be reorganized into separate divisions. Until that time the company had been organized on a functional basis with the manufacturing, sales, finance, and research departments, each under one man's responsibility. Six divisions were to be set up, four by product group, and two by geographical area. Each division was to have its own production, sales, and accounting staff, and a general manager who would be responsible for its operation. The division's operating performance was to be judged by the profit it produced in relation to the investment assigned to it. It was anticipated that the procedure for computing the investment base and the return thereon would have to be carefully worked out if the resultant ratio was to be acceptable to the new division managers as a reasonable measure of their performance.

One of the biggest obstacles to the establishment of the desired monthly profit and loss statement for each division was the pricing of products for transfer from one to another of the various divisions. At the time the divisions were established, the company's president issued a policy statement upon which a pricing procedure was to be based. The president's statement follows: Subject: Pricing Policy for Transfer of Materials Between Profit

Units

Date Effective: January 1, 1955

# Statement of Policy

The *maximum*, and usual, price for transfers between profit units is that price which enables the producing unit to earn a return on the *investment* required, consistent with what it can earn doing business with the *average* of its customers for the product group concerned.

Established prices will be reviewed each six months or when a general change in market prices occurs.

#### Discussion

Pricing policy between operating units is particularly important because to the extent that the price is wrong, the return on one segment of the business is understated, and the return on another is overstated. This not only gives a false measure of how well individuals are performing, but may make for bad decisions on the business as a whole which will affect everyone.

There are two possible relationships between a producing and consuming

division. These are: 1

1. Supplier—Distributor

2. Supplier—Convertor

The elements of investment or expense which may not be found in intracompany relations are:

- 1. Deductions for cash discounts, freight, royalties, sales taxes, customer allowances, etc.
- 2. Usual selling expenses and in many cases order and billing services.

3. Investment in Accounts Receivable.

4. Investment in regular finished goods inventories where the consuming division buys special items to order.

5. Certain customer services by the research laboratories, such as sales services where this applies.

In both cases the producing division which acts as a supplier will establish a price for consideration by discounting his *regular price* structure for the elements listed above which apply. For the purpose of return on capital employed in Accounts Receivable, Inventories, etc., a 25 per cent rate will be taken.

The heads of the buying divisions and selling division must agree on the pricing agreement established. In case of disagreement, the president will decide what is to be done.

<sup>&</sup>lt;sup>1</sup> In the first relationship the buying division merely distributed the material produced by the selling division. In the second case the buying division used the material in its production process so that it became part of a different product.

### Proposed Pricing Policy for Customers of the Blacksilver Division

Statement of Company Policy: Pricing Policy for Transfer of Materials Between Profit Units.

Approved by the President, 12/9/54

Effective: 1/1/55

"The maximum and usual price for transfers between profit units is that price which enables the producing unit to earn a return on the *investment* required, consistent with what it can earn doing business with the *average* of its customers for the product group concerned."

"Established prices will be reviewed each six months or when a general change in market price occurs."

#### Discussion:

The President's policy sets forth return on investment on business done with average customers as being both the goal and the upper limit for an inter-

divisional pricing policy.

This proposal must have the mutual consent of the producing and distributing divisions before it becomes effective. The Financial Services Group <sup>2</sup> will advise whether or not the proposed pricing bases are workable ones before they are put into effect. Those areas where problems have not yet been resolved, or where we will proceed on a temporary trial basis, are pointed out as being subject to change.

# 1. Pricing:

The Producing Division will charge the same price to another division as it charges to the average of its existing customers, less an allowance for those expenses incurred with average customers but not with interdivisional customers. These non-comparable expenses to be deducted include Sales Deductions,<sup>3</sup> Investment in Inventories and Accounts Receivable (where necessary), and a part of Selling Expenses. The prices will be calculated in terms of a markup or multiplier factor on DMC for a product group. By product group we mean, for example, those fifteen code groups into which all our products are divided on the Gross Margin Statements (for example, #50, #70, etc.). A single markup on each product group will be recalculated and submitted each six months, based on the prior twelve months' experience with regular customers.

It is expected that the billing arrangements will be as simple as possible, for example, a flat discount on a class of products is simpler than individual

discounts on each product.

The business between divisions can be thought of as a normal customer relationship and, as such, includes normal research and technical service on the product line unless specifically arranged for in another way. Special project research must obviously be specifically negotiated.

<sup>3</sup> These included freight, royalties, and sales taxes.

<sup>&</sup>lt;sup>2</sup> A staff group under the company's treasurer and controller.

We are hopeful that this policy will work out equitably giving each division a fair basis for the business they do. If in practice it is found that the policy is not working properly, is complicated in its application or calculation, or is working a hardship, the policy will have to be changed.

The largest of the newly formed divisions, the Blacksilver Division, was strongly affected by the problem of transfer prices since about 13 percent of its sales would be to other divisions. The establishment of transfer prices could be done in several ways. They could be based on the current market price reduced by amounts reflecting the five "elements of investment or expense which may not be found in intracompany relations," as listed in the president's policy statement. Another method would be to use direct manufacturing cost (DMC) as a starting figure, with some sort of markup added to fix the sales price.

With only three weeks before the separation into divisions, it was important that a schedule of prices be established quickly for the transfer of products between divisions. The Blacksilver Division's task was vastly complicated by its large number of products. There were several hundred different compounds and materials for which a price had to be fixed. It was, therefore, partly for the sake of expediency that the Blacksilver Division chose to set the prices on the basis of direct manufacturing cost. The figures used in this method were more readily available than those used in setting a price based on the current market price. Furthermore, the system was susceptible to a grouping of products, thereby eliminating a large number of calculations. The division's products could be divided into fifteen groups of related items, each group to be handled as a unit for setting transfer price markups. In addition periodic profit and loss statements could be made for each group.

A week after the president' policy statement on transfer pricing had been distributed, the Blacksilver Division issued the following interpretation of the policy which stated the proposed method for setting prices for the sale of products by the Blacksilver Division to other divisions.

For example, the selling price of Product Group #70 to the Foreign Sales Division for the second half of 1954 would have been calculated as follows:

1. Compute prior twelve-month DMC to Regular Customers for each Product Group:

Second half 1953, first half 1954 Sales of #70 to:

Custon	ners (\$000)		\$500	100%
	Manufacturing	Cost	350	70
	· ·		\$150	200
			9190	30%

Markup to Regular Customers = 1.43 times  $(100 \div 70)$ 

2. Deduct Noncomparable Expenses from Selling Price to get new multiplier for interdivisional Sales:

Sales Deductions 1.0% Accounts Receivable (25% average company return  $\times$  30 days average receivables = 2.0% 360 days in 100% sales year

Selling Expenses (Product average of 4.4% less 10% for those expenses incurred for the benefit of all divisions)  $\frac{4.0\%}{7.0\%}$ 

$$\frac{100 - 7.0\%}{70\%} = 1.33 \text{ times}$$

3. Apply this markup to the DMC of each product in the product group as it is sold to the Foreign Sales Division.

The above steps will be the general rule for calculating our prices to other divisions. Exceptions to this procedure may arise under the following conditions:

a. If sales of a product to regular customers out of one of the producing plants for the twelve-month period are too small to provide a reliable base for calculating the markup for that group, then sales of *all* producing plants of the division for the twelve-month period will be used.

For example, in the last twelve months, sales of the #50 group were \$2,340. This small amount is subject to too wide a margin of error to use as a base for pricing a much larger Foreign Sales Division volume. Therefore, U. S. Domestic Sales would be used, which were around \$50,000 for 1954.

When sales volume for any one product group out of any one plant is less than \$10,000 for twelve months, then sales from all three U. S. Plants will be used as a base.

b. If a group of products with no domestic equivalent is produced only for sale to another division of the company, a selling price will be negotiated directly.

c. When materials are sold to another division in a semi-finished state, a selling price will be negotiated in place of the above formula, except where these semi-finished goods differ from finished goods in name only.

d. In some cases raw materials are supplied from one division to another to give the receiving division the benefit of quantity purchase and duty benefits it

would be otherwise unable to obtain. In these cases the supplying division will charge only the actual cost of the materials, plus an appropriate charge to reflect cost of handling, receiving warehousing, investment, and purchasing, but no profit.

On April 25, 1955, the company's president announced a revised statement of interdivisional pricing policy. The new policy emphasized negotiation as a basis for establishing transfer prices rather than maintenance of a rate of return.

One of the reasons for restating the policy lay in a difference of opinion which arose between the Blacksilver Division and the Refined Products Division over the prices the latter established or products it was selling to the Blacksilver Division. Almost 20 percent of the Refined Products Division's sales were to other divisions, making interdivisional sales an important part of its business. At the time Hydrocarbon Products Company was reorganized into divisions, the Refined Products Division was operating at a loss, whereas the Blacksilver Division was making a reasonable profit. In the discussion of prices a question arose on the interpretation of the president's first paragraph in his statement of policy. The Refined Products Division wished to charge a price to the Blacksilver Division which would yield a return comparable to the return the Blacksilver Division was making. The latter replied that the rate of return used should be that of the producing division, which in this case was negative. The Refined Products Division, however, would not agree to this, because, they said, they would be unduly penalized by the unfavorable nature of the rest of their business. They would never be able to make any money selling within the company to other divisions.

After settling this controversy by arbitrarily setting a transfer price for this instance, the president decided that the transfer price policy should not use the rate of return on investment as a basis for pricing, but rather that the determination of transfer prices should be left to negotiation between division managers. Therefore, in order to clarify this and also to add some detail to the description of possible relationships between the buying and selling divisions, the following policy statement was substituted in April, 1955, for the original one issued in December, 1954.

Subject: Pricing Policy for Transfer of Material Between Profit Units

Date Effective: July 1, 1955

# Statement of Policy

The prices to be charged, or fees or commissions allowed on the transfer of materials between divisions are to be negotiated in good faith within the limits set forth below, and with the intention that they shall be fair to both divisions and in keeping with the multiple profit concept of the company.

Established prices, fees, or commissions will be reviewed each six months,

or when a general change in market prices occurs.

#### Discussion

There are four cases involving prices or commissions between divisions.

1. "Raw material"

- 2. Partially Finished Products
- 3. Resales
- 4. Commissions

#### "Raw Material"

This is a material which the buying division consumes in the manufacture of its products. In addition, it is a finished product, or is closely related to a finished product, made and sold by the producing division.

The pricing policy for Raw Material is not intended to:

a. Give the buying division a price advantage over what it could buy for from the outside if it were a free agent, nor

b. Give the producing division an expense advantage because it is selling inside the company.

The price is to be arrived at by negotiation. In those cases where the material is regularly made and sold to the outside, it is expected that the price shall not exceed the lowest net sales price then currently being invoiced by the producing division to any manufacturer for the product in similar containers and in like quantity of total annual purchases, irrespective of quantity shipped at any one time.

To offset the expense advantage which the producing division gets from "inside" sales, the president will determine, after discussions with the producing division, the amount of the savings which will be charged to the producing

division and credited to a central department.

Nothing in this policy for raw material makes it necessary for any division to agree to buy from any other division, and, likewise, there is nothing which makes it necessary for any division to agree to sell to any other division unless both divisions are entirely satisfied with the arrangements.

# Partially Finished Product

This is a partly finished product of the producing division not offered for sale as such, not available from outside sources, and consumed by the buying

division in the manufacture of its products. The interdivisional price for these materials is to be negotiated.

#### Resales

These are products produced and sold by one division and bought from the producing division by the buying division for resale. This applies primarily to the Foreign Sales Division where, in general, they have responsibility for all merchandising and pricing policies in their area. The interdivisional price for these products is to be negotiated.

#### Commissions

These are paid to the Southern Division for the sale of any product in its territory which it does not manufacture. The Southern Division has exclusive distribution rights and is completely responsible for all sales, accounts receivable, inventories, and personnel in its territory. The commission will be negotiated by the divisions involved.

#### General

In setting prices, commissions, and fees between divisions, it is particularly important that they be right, because to the extent that they are wrong the return to one division is understated and the return to the other is overstated. This not only gives a false measure of how well divisions are performing, but may lead to bad decisions which will affect everyone.

In the case of partially finished products, resales and commission arrangements, the price or commission negotiated must take into consideration the

following:

a. The buying division is not free to purchase on the outside.

b. An incentive should be provided the buying division to insure aggressive

promotion and sale of the products.

c. The producing unit should earn a return on the investment involved which is consistent with what it can earn (with that product group) doing business on the outside.

Those items of investment or expense not involved in the interdivisional

transfer, such as:

1. Deductions for cash discounts, freight, royalties, sales taxes, customer allowances, etc.

2. Selling expenses and, in many cases, order and billing services.

- 3. Investment in Accounts Receivable and in regular finished goods inventories where the consuming division buys special items to order. A 25 per cent return will be used until December 31, 1955, at which time a new rate will be set.
- Certain customer services of the research laboratories as sales services where this applies.

In the negotiations, both the buying and selling divisions will document their basis for any offer or counteroffer.

In cases where satisfactory arrangements cannot be negotiated, the president will decide what is to be done in all cases except Raw Material.

At the time when this revised statement of company policy was circulated, the Blacksilver division did not make any changes in its statement of interpretation.

The accounting problems involved in providing separate profit and loss statements were not easily solved. There had been little time for preparation of the accounting structure, and the many hundreds of different products involved in transfers between divisions made the accounting for these transfers a major monthly task. Though the multiplier for all products within a group was the same, each individual product's direct manufacturing cost and monthly volume had to be recorded. The desire of those involved in establishing a workable system was reflected by one man's statement that they wanted to "wrap up the package and be done with it." It was expected that once the prices were agreed upon, direct manufacturing cost figures would be examined quarterly for any necessary changes, but that the multiplier would not be changed as often.

After the system had been operating about a year, situations began to arise which required special consideration. One of these concerned Foreign Sales Division which was purchasing a certain chemical in bulk from the Blacksilver Division for resale to Germany. Using the multiplier formula to establish the transfer price, and adding the Foreign Sales Division's costs of distribution, the Foreign Sales Division found they were priced out of the German market by about 6 per cent. If a lower transfer price could be established, permitting the Foreign Sales Division to compete in the German market, a significant additional volume could probably be secured from several large customers. After discussing the problem at length the managers of the two divisions decided to set a special price for these large German customers and to account for the shipments separately from the other shipments of products within the product group.

A similar problem appeared when the Foreign Sales Division protested the transfer price of another product. Since the multiplier for a product group was based on the weighted average of the markups for all outside sales the previous year, it was possible for the transfer price of a product to look high or low when compared to the actual outside selling price. Furthermore, it could not be argued by the selling division that any inequity would balance out, since within a group the mix of products which were transferred to another divi-

sion might not be the same as the mix on which the multiplier was based.

Another type of problem arose when the Southern Division manager came to the manager of the Blacksilver Division with a proposal concerning a compound which Blacksilver had been producing and selling to the Southern Division for distribution. At the time of divisionalization the products which each division would produce were agreed upon. However, this particular compound was not covered specifically, and since it was a fairly simple compound to produce, it was possible for other divisions besides Blacksilver to produce it. The Southern Division was one of these and had idle facilities to do it.

The Southern Division manager stated that he wished to change the allocation of the total company markup between his division and the Blacksilver Division. With the present transfer price he received 20 per cent of the total markup over direct manufacturing cost, and the Blacksilver Division received 80 per cent. Now he wished to receive 70 per cent, leaving 30 per cent for Blacksilver. This markup, he said, was reasonable since the 30 per cent would still represent contribution to overhead and profit of the Blacksilver Division, which already had excess production capacity for the compound.

The request was prompted by the Southern Division's receipt of a new standing order at a slightly reduced price for an amount two and one-half times the division's present sales of the compound. The Southern Division manager stated that to accept the order, either the price to the division had to be lowered, or the division would produce the compound itself. The increased volume made it economically feasible for the Southern Division to use its idle production facilities.

Another situation arose in connection with a special compound "G" which the Blacksilver Division produced and sold to one large domestic user, several small domestic users and, through the Foreign Sales Division, to the overseas market. Sales of the compound were among the largest of any single product and represented about one-third of the division's sales to the Foreign Sales Division.

One of the major ingredients of compound G had been purchased from one large supplier who, because of the technical requirements, had to make special production runs. In the spring of 1957, after considerable searching and development work, a new supplier was found who could supply the major ingredient at a 20 per cent lower price, which would reduce the Blacksilver Division's direct manufacturing cost by almost 10 per cent. Considerable discussion followed as to what effect this would have on the price at which compound G was transferred to the Foreign Sales Division.

The contract which the Blacksilver Division had with the one large domestic user of compound G stated that the price would be based on Blacksilver's manufacturing cost. With the new supplier and the lower manufacturing cost, the price to this customer would have to be reduced. The price to other domestic users was not contractually related to cost so Blacksilver was free to maintain its

selling price, and thereby receive a larger profit.

The price at which compound G would be transferred to the Foreign Sales Division was not so easily settled. If the established multiplier formula were retained, the transfer price would be reduced and Blacksilver would lose the benefit of the work to find and develop the new supplier. On the other hand, if the formula were to be changed and the old price maintained, the question arose as to what the new basis would be. Thus far the multiplier had been based on a full year's cost and sales experience with outside customers, and, unless this procedure were changed, the multiplier would not reflect fully the new cost for a year. Thus a projection of costs would have to be made, if any change in the multiplier were made now, and the basis of the projection and any subsequent adjustments to it would be subject to much debate. Furthermore, if such a change were allowed once with all its associated accounting complications, there could easily be many other adjustments brought up for consideration. "Such shifting from one pocket to another," said one man in the Blacksilver Division, "can take a lot of time."

#### **BIRCH PAPER COMPANY**

# Administering Transfer Price Policy

The Birch Paper Company case also involves the question of transfer pricing as it relates to the use of the concept of return on investment in measuring performance of divisions. This case raises the problem of reconciling conflicts which may arise between the interests of a particular division and the company as a whole.

"If I were to price these boxes any lower than \$480 a thousand," said Mr. Brunner, manager of Birch Paper Company's Thompson division, "I'd be countermanding my order of last month for our salesmen to stop shaving their bids and to bid full cost quotations. I've been trying for weeks to improve the quality of our business, and if I turn around now and accept this job at \$430 or \$450 or something less than \$480 I'll be tearing down this program I've been working so hard to build up. The division can't very well show a profit by putting in bids which don't even cover a fair share of overhead costs, let alone give us a profit."

Birch Paper Company was a medium-sized, partly integrated paper company, producing white and kraft papers and paperboard. A portion of its paperboard output was converted into corrugated boxes by the Thompson division, which also printed and colored the outside surface of the boxes. Including Thompson, the company had four producing divisions and a timberland division which sup-

plied part of the company's pulp requirements.

For several years each division had been judged independently on the basis of its profit and return on investment. Top management had been working to gain effective results from a policy of decentralizing responsibility and authority for all decisions but those relating to over-all company policy. The company's top officials felt that in the past few years the concept of decentralization had been successfully applied and that the company's profits and competitive position had definitely improved.

In early 1957 the Northern division designed a special display box

for one of its papers in conjunction with the Thompson division which was equipped to make the box. Thompson's package design and development staff spent several months perfecting the design, production methods, and materials which were to be used. Because of the unusual color and shape these were far from standard. According to an agreement between the two divisions, the Thompson division was reimbursed by the Northern division for the cost of its design and development work.

When the specifications were all prepared, the Northern division asked for bids on the box from the Thompson division and from two outside companies. Each division manager was normally free to buy from whichever supplier he wished, and even on sales within the company, divisions were expected to meet the going market price

if they wanted the business.

In early 1957 the profit margins of converters such as the Thompson division were being squeezed. Thompson, as did many other similar converters, bought its board, liner, or paper and its function was to print, cut, and shape it into boxes. Though it bought most of its materials from other Birch divisions, most of Thompson's sales were to outside customers. If Thompson got the business, it would probably buy the liner board and corrugating medium from the Southern division of Birch. The walls of a corrugated box consist of outside and inside sheets of linerboard sandwiching the fluted corrugating medium. About 70 per cent of Thompson's out-of-pocket cost of \$400 represented the cost of linerboard and corrugating medium. Though Southern had been running below capacity and had excess inventory, it quoted the market price which had not noticeably weakened as a result of the oversupply. Its out-of-pocket costs on both liner and corrugating medium were about 60 per cent of the selling price.

The Northern division received bids on the boxes of \$480 a thousand from the Thompson division, \$430 a thousand from West Paper Company, and \$432 a thousand from Eire Papers, Ltd. Eire Papers offered to buy from Birch the outside linerboard with the special printing already on it, but would supply its own inside liner and corrugating medium. The outside liner would be supplied by the Southern division at a price equivalent of \$90 per thousand boxes, and would be printed for \$30 a thousand by the Thompson division.

Of the \$30, about \$25 would be out-of-pocket costs.

Since this situation appeared to be a little unusual, Mr. Kenton, manager of the Northern division, discussed the wide discrepancy of bids with Birch's commercial vice-president. He told the commercial vice-president, "We sell in a very competitive market where higher costs cannot be passed on. How can we be expected to show a decent profit and return on investment if we have to buy our supplies at more than 10 per cent over the going market."

Knowing that Mr. Brunner had on occasion in the past few months been unable to operate the Thompson division at capacity, it seemed odd that Mr. Brunner would add the full 20 per cent overhead and profit charge to his out-of-pocket costs. When asked about this over the telephone, Mr. Brunner's answer was the statement which appears at the beginning of the case. He went on to say that having done the developmental work on the box, and having received no profit on that, he felt entitled to a good markup on the production of the box itself.

The vice-president explored further the cost structures of the various divisions. He remembered a comment the controller had made at a meeting the week before to the effect that costs which for one division were variable, could be largely fixed for the company as a whole. He knew that in the absence of specific orders from top management, Mr. Kenton would accept the lowest bid which was that of the West Paper Company for \$430. However, it would be possible for top management to order the acceptance of another bid if the situation warranted such action. And although the volume represented by the transactions in question was less than 5 per cent of the volume of any of the divisions involved, other transactions could conceivably raise similar problems later.

#### LONG MANUFACTURING COMPANY

# Allocation of Assets to Decentralized Divisions

This case raises the question of allocating a company's investment in research and development facilities to its various divisions, again in connection with the use of the concept of return on investment in measuring performance. Administrative questions as well as problems of technique are involved.

The Long Manufacturing Company with 1956 sales of just over \$100,000,000 operated six plants which produced different but related products for sale to other companies or consumers. Each plant was operated independently by a plant manager whose performance was judged by several factors, one of the most important of which being the return the plant made on the investment which had been allocated to it.

The investment figure used in the calculation had, since the system was started, included all the investment over which each plant manager had control. Until the spring of 1957 there were two classes of investment which were not included in the divisions' investment base: headquarters investment and research investment. The former was small (.2 per cent of the company's total net investment) since most of the headquarters' facilities were rented. Research investment had until recently also been small, but by the spring of 1957 had grown to just over 1 per cent of the company's total net investment, and it was expected that more money would be invested in research facilities in the near future.

In late 1956, the president of Long Manufacturing Company asked that all the company's investment be distributed in some way to all the operating divisions. This would, he stated, make the reported return on investment by the plant more realistic as indicators of how well the company as a whole was doing.

The recommended method of distribution of investment was to be based initially on the allocation of expenses. Distributed investment would bear the same relationship to total investment as allocated expenses bore to total expenses. If a division had 20 per cent of total research expenses allocated to it, it would carry a 20 per cent of total research investment. The allocation of expenses for both research and headquarters activities was in turn according to a simple average of three weighting factors: net realization, or sales less freight and discounts; net book value of the property assigned to the plant; and payroll or total salaries and wages. Thus, if a division had 10 per cent of the company's total net realization, 9 per cent of total net book value of property, and 14 per cent of the directly assignable payroll, the division would be allocated 11 per cent of the headquarters and research expenses. It would also now be allocated 11 per cent of the research and headquarters investment.

One exception to the allocation of research expenses by formula occurred in the case of expenses which were in the nature of technical service costs. These were charged directly to the plant for which the work was done. In theory this exception had seemed reasonable; in practice, however, the line separating technical service from research was difficult to define.

A memorandum was issued to all plants early in 1957 explaining the forthcoming allocation of headquarters and research investment. The memorandum made the following statements about the allocation of research investment:

#### Allocation of Total Gross Investment to Plants

Currently the plants do not include in their operating investment base any of the facilities that serve the entire company, for example, research. Inclusion of these facilities will mean that the operating return on investment should now measure the performance of the total assets in the company.

#### Recommended Method of Allocation of Research Investment to Plants

Distribution on the Basis of Research Expense: This makes use of readily available figures and adds a measure of flexibility, for distribution depends on the annual budgeted research expenses. This incorporates a measure of their "value received" from research during the year. Over a period of time allocation of the research gross investment will be improved as more precise expense figures are developed.

Soon after this memorandum was issued, the financial analysis manager received a letter from one of the division managers which said in part:

... I question the advisability of allocating research investment to the divisions. As you know, we exercise no direct control over research expenditures and,

consequently, we are unable to control the effect of increased research investment on our return. It seems to me the return on investment concept will be a more meaningful tool to the divisions if our investment base includes only those items over which we have some degree of control....

The financial manager knew that, though it was the company's research director who actually planned what was to be worked on by his research staff, the plant managers did have some influence on the research director's decisions through periodic discussions with him. Furthermore, two of the plant managers were on the board of directors and in directors meetings could exercise some influence over the choice of research projects.

With these facts in mind the financial analysis manager wrote an answer to the plant manager's letter. This read in part as follows:

# Letter to a Division Manager from Financial Analysis Manager

... The major item that had not formerly been carried by the plants in their investment base is the investment in research. The reason that this is now included is so that returns will be based upon the *total* investment in the company. We do not believe that the company could long exist without research. And, we believe that the plants and products they produce benefit from this research and should therefore carry their share of such investment.

Your point on exercising direct control over research investment is well taken. However, I do not feel that this is an issue and I do question the implication

that a plant manager has no degree of control over research.

Return on investment is an analytical tool that we have tried to make uniformly applicable to as many general and specific problems as possible. We have attempted to make it equally applicable in measuring past performance and providing a guide for current problems, as well as giving a basis for decisions affecting the future. It is not a perfect yardstick, but it does come close.

There is no reason why this tool cannot be designed by plant management to serve its particular purposes at any level within the plant. I am thinking here of plant managerial control and would be glad to work with you on this....

What position would you take on this question? How do you react to the financial manager's letter?

#### **BORAH PETROLEUM COMPANY**

# Analyzing and Reporting Operating Results

The Borah Petroleum case deals with the problem of summarizing and communicating to top management the results of a company's operations. The case provides a springboard for a discussion of the broad question of reporting to management.

The controller of the Borah Petroleum Company was setting up a new "control book" which would summarize key data for the executive committee comprising members of top management.

Exhibit 1 is a comparison of 1954 and 1955 operating results for one sales district. District managers had used this form for twenty years. Analysis in this detail for thirty sales districts, however, was

thought to be too much for the top management group.

The controller proposed condensing the comparison for each district to a statement of the increment in profit broken down by causes of variation. His first attempt to break the change in net profit down by causes is shown in Exhibit 2. The causes considered were volume, price per gallon, costs per gallon (exclusive of marketing cost), product mix, and marketing cost. Change in net profit due to volume equaled the change in over-all gallon volume times the 1954 net income per gallon. Price, cost, and mix effects were combined in the calculation of profit change due to gross margin (change in gross margin per gallon times 1955 gallon volume). Change due to marketing costs equaled change in marketing cost per gallon times 1955 gallon volume.

Gross margin change was broken down in turn into price, cost and mix change. Price change was calculated by multiplying the change in price per gallon for each product by the corresponding 1955 gallon volume and adding algebraically the resulting changes for all products. Cost change was calculated in the same way. Mix change was

<sup>&</sup>lt;sup>1</sup> Throughout the exhibits, a figure in parentheses indicates a decrease from 1954 to 1955 in the absolute magnitude of the figure in question, whether for example, it be a price figure (causing a reduction in profit) or a cost figure (causing an increase in profit).

found by subtracting the net effect of cost and price change from the over-all margin change figure defined above.

The controller's first attempt was discussed and rejected by the executive committee. The vice-president in charge of sales said that the change in marketing costs from 1954 to 1955 as stated in the comparison of operating results (Exhibit 1) was clearly \$18,189, not \$88,490, as shown in Exhibit 2. He further pointed out that part of the Bulk Plant and Jobber Expense within marketing costs was allocated to each district in proportion to its gallonage. As far as he could see, the formula in Exhibit 2 made no provision for the resulting effect of a change in volume.

Another member was concerned about the apparent discrepancy between the over-all change in gross margin and the net change resulting from changes in price and cost. The over-all gross margin change resulted from multiplying the difference between the 1954 and 1955 gross margins per gallon by the 1955 gallon volume. On the other hand, the change in net profit resulting from a change in price was calculated by multiplying the change in *individual* product prices by the respective 1955 gallon volumes.

As he saw it, the gross margin per gallon figures used to compute the over-all result of a change in gross margin were averages weighted by the gallon volumes of individual products for 1954 and 1955 respectively. Yet when the over-all result was broken down to price and cost effects, 1955 gallon volumes were used to weight the difference between individual product margins, a procedure which was equivalent to weighting product margins for both years by 1955 gallon volumes. This procedure he regarded as suspect, even disregarding the fact that the 1954 margin average used in the over-all margin calculation was weighted by 1954 product volumes.

The controller himself was dissatisfied with his first approach for still a different reason. He wondered whether it was realistic or useful to calculate the change in net profit resulting from a change in volume on the assumption of a constant net income per gallon. In his experience many marketing costs tended to remain constant with changes in volume. In consequence, cost per gallon tended to fall as volume increased, and net profit per gallon tended to increase.

The controller therefore determined to try again. Three different approaches embodying volume change calculations based on the assumption of constant gross margin per gallon rather than constant

net profit are shown in Exhibit 3. Again the causes considered were volume, selling price, cost of goods sold, product mix, and marketing cost. The change in district profit due to marketing cost was the same in each approach (Exhibit 4).<sup>2</sup>

Which of the analyses presented do you think most useful?

Suggest how this kind of report could be used by operating management.

 $<sup>^2</sup>$  Differences in the net change in net income resulting from the several methods were due to rounding prices, costs, and gross margins per gallon.

EXHIBIT

# Comparative Operating Results

		Gallons		Do	Dollars	I	Dollars per Gallon	llon
	1955	1954	1955–1954	1955	1954	1955	1954	1955–1954
Sales								
1. Gasoline	46,010,949	43,897,335	2,113,614	7,233,624	6,961,332	.1572152	.1585821	( .0013669)
2. Kerosene and								
distillates	2,617,615	2,265,503	352,112	351,587	314,573	.1343157	.1388535	( .0045378)
3. Lube oil	1,026,843	1,198,758	(171,915)	807,993	910,188	.7868710	.7592758	.0275952
4. Grease	106,444	101,298	5,146	114,686	108,465	1.077430	1.070752	.006678
5. Antifreeze	6,934	6,788	146	13,066	12,532	1.884338	1.846199	.038139
6. Miscellaneous	426	258	168	1,187	546	2.786384	2.116279	.670105
Total	49,769,211	47,469,940	2,299,271	8,522,146	8,307,638	.1712333	.1750084	( .0037751)
Cost of Goods Sold								
1. Gasoline			:	5,124,102	4,937,701	.11136701	.11248293	( .00111592)
2. Kerosene			:	247,499	212,136	.09455133	.09363748	.00091385
3. Lube Oil			:	471,510	538,698	.04591841	.04493801	0.0098040
4. Grease				85,929	82,575	.80726955	.8151691	( .00789955)
5. Antifreeze			:	9,951	8,792	1.4351023	1.2952268	.1398755
6. Miscellaneous				858	369	2.0140845	1.4302325	.5838520
Total				5,939,851	5,780,274	.1193479	.12176713	( .00241913)

EXHIBIT 1 (continued)

				Do	Dollars	D	Dollars per Gallon	on
				1955	1954	1955	1954	1955-1954
Gross Margin								
1. Gasoline			:	2,109,522	2,023,630	.04584826	.04609915	( .00025089)
2. Kerosene			:	104,088	102,436	.03976444	.04521556	( .00545112)
3. Lube Oil				336,482	371,490	.32768592	.30989574	81067710.
4. Grease			:	28,757	25,890	.27016083	.25558253	.01457830
5. Antifreeze			:	3,114	3,739	.4490914	.5508249	( .1017335)
6. Miscellaneous			:	329	176	.7723004	.6821705	.0901299
Total				2,582,295	2,527,364	.05188539	.05324135	(00135596)
Markatina Costs		Dollars						
Maintening Costs	1955	1954	1955–1954				-	
Bulk plant and jobber expense	2,000,894	2,003,275	(2,381)			4		
Depreciation		153,614	14,783					
Taxes	51,244	45,457	5,787					
Total	2,220,535	2,202,346	18,189			.04461664	.0463945	(06177790)
Total Net Income	361,760	325,018	36,742					

## EXHIBIT 2

# The Controller's First Analysis of the Change in Net Profit

1. Volume change (change in volume  $\times\,1954$  net income per gallon) 2,299,271  $\times\,.006847$ 

2. Analysis of the change in gross margin (change in gross margin per gallon  $\times$  1955 volume) (.001356)  $\times$  49,769,211

(67,487) (67,487)

15,743

	1955 Volume	Change in Price Per Gallon	1955 Volume X Price Change	Change in Cost Per Gallon	1955 Volume × Cost Change
Gasoline Kerosene and distillates Lube oil Grease Antifreeze Miscellaneous	46,010,949 2,617,615 1,026,843 106,444 6,934	(.001367) (.004538) .027595 .006678 .038139	(62,892) (11,878) 28,336 711 264 285	(.001116) .000914 .000980 (.007900) .139876 .583852	(51,345) 2,392 10,067 (841) 970 249
		Price Change	ge (45,174)	Cost Chan	Cost Change (38,508) Net (6,666)

Mix Change (change in gross margin less net of price and cost change)

(60,821)

(88,490)

36,746

3. Change in marketing costs (change in marketing cost per gallon  $\times$  1955 volume) (.001778)  $\times$  49,769,211

Change in Net Income (1 plus 3 less 2)

### ENHIBIT 3

# Analysis of the Change in Gross Margin (No. 1)

 Volume change (change in Volume × 1954 Average Gross Margin/Gallon) 2,299,271 × 0.05324135 = 122,416
 Price and product mix change (1955 volume × change in Average Price/Gallon) 49,769,211 × (0.0037751) = (187,884)
 Cost of Goods Sold and product mix change (1955 volume × change in Average Cost/Gallon) 49,769,211 × (0.00241913) = (120,398) Net Gross Margin Change

Analysis of the Change in Gross Margin (No. 2)

	Change in Volume	1954 Gross Margin	Change X 1954 Gross Margin	1955 Volume	Change in Price per Gallon	1955 Volume X Price Change	Change in Cost per Gallon	1955 Volume X Cost Change
Gasoline Kerosene and	2,113,614	0.0460992	97,436	46,010,949	(0.001367)	(62,897)	(.0011159)	(51,344)
distillates	352,112 (171.915)	.3098959	15,921 (53,276)	2,617,615	(.004538)	(11,879) 28.336	.0009139	2,392 10.067
Grease	5,146	.2555825	1,315	106,444	.006678	711	(9668200.)	(841)
Antifreeze	146	.5508249	80	6,934	.038139	264	.1398755	970
Miscellaneous.	168	.6821705	115	426	.670105	285	.5838520	249

1. Volume and Product Mix Change 61,581 Net Gross Margin Change

3. Cost Change (38,507)

2. Price Change (45,180)

4. Mix Change (60,835)

A **	1955 Volume	Change in Price per Gallon	1955 Volume X Price Change	Change in Cost per Gallon	1955 Volume X Cost <sub>e</sub> Change		•
Gasoline Kerosene and	46,010,949	(.001367)	(62,897)	(.0011159)	(51,344)		
lates	2,617,615	(.004538)	(11,879)	.0009139	2,392		
	1,026,843	.027595	28,336	.0009804	10,067	Volume and product mix change	
Frease	106,444	.006678	711	(9668200.)	(841)	(No. 2)	61,581
Antifreeze	6,934	.038139	264	.1398755	940		
fiscellaneous	426	.670105	285	.5838520	249	Volume change (No. 1)	122,416

Net Gross Margin Change

2. Price Change (45,180)

3. Cost Change 38,577

ENHIBIT 4

Reconciliation of Change in Gross Margin and Marketing Costs with Change in Net Income

	Analysis No. 1		Analysis No. 2		Analysis No. 3	3
	Volume Change	\$122,416	Volume and Mix Change \$61,581	\$61,581	Volume Change	\$122,416
Gross	Price and Product Mix Change	(187,884)	Price Change	(45,180)	(45,180) Price Change	(45,180)
Margin	Less Cost and Product Mix Change	(120,398)	Cost Change	(38,507)	Cost Change	(38,507)
	Total	\$ 54,930		\$54,978	Mix Change	(60,835)
Less	Overhead and Operating Expense	(2,381)				
Marketing Costs	Change in Taxes and Depreciation Total	$\frac{20,570}{18,189}$			Less	18,189
Net Income	1955 . 1954	\$361,760 325,018				
	NET CHANGE IN NET INCOME	\$ 36,742				\$ 36,729

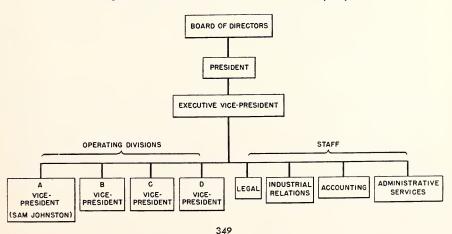
### CLARK CHEMICAL COMPANY

### The Controller's Duties

This case deals with a question of jurisdiction as between the controller and operating management. It involves a fundamental disagreement as to the role of the controller.

The Clark Chemical Company had just completed a management reorganization. Under the plan adopted, the organization structure had been changed from a functional one, with vice-presidents of sales, manufacturing, legal, and industrial relations all reporting to the president, to a divisional setup. Four operating divisional vice-presidents, each with responsibility for a group of products, now reported to the president. Each vice-president had "profit and loss responsibility" for his division and corresponding authority, subject only to such restrictions as maximum limits on capital expenditures, legal and patent matters, and general company policy matters. A chart of the new organization is shown in Exhibit 1.

**EXHIBIT 1**Organization of the Clark Chemical Company

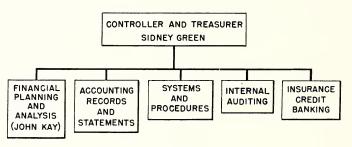


The Clark Chemical Company was currently celebrating its fiftieth anniversary; during the fifty years of its life the volume of the company's sales had grown from a few thousand dollars to over thirty-seven million dollars. This growth had come through developing and specializing a series of chemical products for industrial users.

### The Accounting and Financial Function

At about the same time that the organizational changes were being made, the company employed Sidney Green to head its accounting and finance function. Mr. Green came to the company from a firm of similar size in which he had acted as assistant controller and assistant treasurer. He was known by his associates as a man who had some firm ideas as to what a good controller organization should do in a decentralized operation and was aggressive in advancing those ideas. As one of his first steps he worked out the organization of his own unit, as shown in Exhibit 2. He was able to staff each section with an able young man having somewhat similar ideas concerning the appropriate role of the controller in business management.

**EXHIBIT 2**Finance and Accounting Organization



The next step the new controller took was to ask each of his section heads to submit a program for carrying out the responsibilities of his section. At a series of staff meetings these programs were presented and discussed. These meetings provided an opportunity for each section to gain an understanding of the whole job to be done; they also facilitated the elimination of major duplications and the covering of areas where gaps occurred.

### The Problem

The Financial Planning and Analysis section of the controller's office submitted as its program the report shown in Exhibit 3. This program was approved by Mr. Green, the controller. John Kay, the head of the Financial Planning and Analysis section, immediately began to work out detailed plans to carry out his program. As noted in Part V of Exhibit 3, he undertook to develop both a written and oral report to the executive vice-president covering the results of monthly operations for each division in the company. Mr. Kay had selected a number of men in his section and assigned to each of them the responsibility for getting familiar with operations of a particular division. After monthly operating statements had been prepared, the individual responsible for each division set out to prepare an analysis of the division for which he had responsibility. To do this he frequently called on members of the operating divisions for explanations, forecasts, and various other kinds of information.

After this plan had been in operation for several months, Mr. Green attended a management meeting of the executive officers and operating vice-presidents. When the meeting was opened to general discussion, the following discussion took place.

SAM JOHNSTON (Vice-President of Division A): Mr. President, I have a bone to pick with Sidney (controller) here, and I might as well get my gripe out on the table. I object to the way Sidney's man, Kay, goes about getting explanations of monthly operating results. Not that he's obnoxious or anything, I just don't approve of the whole idea. First, we have to tell him what he needs to know and this takes time. Then he goes back to his office and writes up what we have told him. Secondly, and more important, is the management philosophy involved. I believe each operating division should make its own report and explanations of what happened last month. The controller's office should furnish us the statements and we should do the analysis and explaining. Not only is this easier, but it's part of our job. We should have to explain to the executive vice-president, and we need to know anyway to run our department well. Well, that's quite a speech, but it's how I feel!

SIDNEY GREEN: Am I clear in thinking you don't object to Kay's or his men's behavior, just the principle involved?

SAM JOHNSTON: That's right. They are a nuisance but pleasant about it.

SIDNEY GREEN: Don't you think in time Kay's men would learn your operation and then they could help you? After all, we've only been doing this a few months.

SAM JOHNSTON: We will take all the help we can, if it doesn't cost anything, but, on this point, we are helping you to do what we have to do anyway.

SIDNEY GREEN: You mean you think it is not the duty of the controller to report on and analyze the results of operations of the divisions? That's fundamental to good control

mental to good control.

SAM JOHNSTON: Absolutely! It's not the controller's job to analyze operations and report to the boss. That's my job. Now, I agree that you have a responsibility to the boss. It seems to me your job should be to be sure we are using the right figures. Further, I can accept the idea of your reviewing our explanations and analysis, and reporting whether you agree with us. Your function though would be a review one. Now that we are in this discussion, I'd sure like to get a decision from the president on this point.

As the president, what position would you take on this question?

### **EXHIBIT 3**

### Financial Planning and Analysis Program

- I. Work with top management and divisions in developing projections of business operations and setting goals.
  - a. Annual Plan or Budget
  - b. Five-Year Forecast
  - c. Cash Requirements
  - d. Capital Expenditure Program
- II. Interpret management plans in financial terms. Make or assist in economic studies of proposed facility and equipment investments, research programs, markets, industries, and possible company acquisitions to provide guidance to top management and divisions.
  - a. Estimate of research project cost, elapsed time, anticipated results.
  - b. Estimate of plant and facility start-up cost, volume requirements, payoff period, return on investment.

c. Estimate of market development cost, elapsed time.

- d. Examine capital structure of companies desirable for acquisition and evaluate profitability. Recommend financial terms for purchase.
- e. Other studies as needed.
- III. Appraise current investments and operations indicating where financial improvements might be made.
  - a. Receivable balances and terms.
  - Inventory levels and evaluations of content related to sales outlook.
  - c. Product line P & L's and investment.
  - d. Cash balances and working capital levels. Make short term projections.

- IV. Work with operating personnel in developing operating goals and setting expense controls. Explore methods of maximizing operating margin and minimizing investment under various conditions.
  - a. Operating margin and return on investment goals.

b. Departmental expense budgets.

c. Relationship of expenses to volume—fixed and variable.

### Financial Planning and Analysis Program

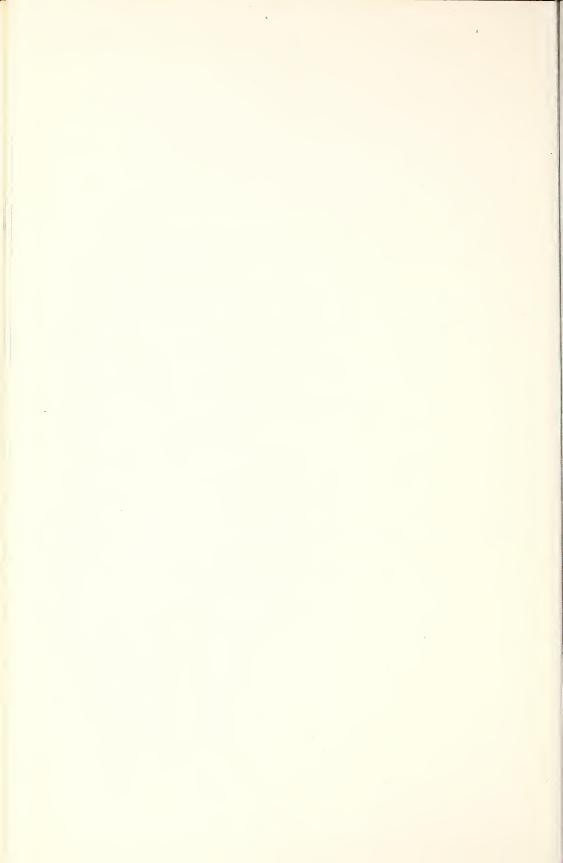
- V. Report on current performance related to yardsticks (Annual Budget, Departmental Expenses, Capital Expenditure Programs, etc.).
  - a. In personal meetings, written reports, and Division Heads' Meetings, report on over-all and divisional results related to Annual Budget. Monthly basis.
  - b. Capital Expenditure Program—appraise progress during current year both as to stage of completion and actual cost of projects. Quarterly basis for first six months and monthly thereafter.
  - c. Develop and maintain charts to portray trends more effectively.
- VI. Assist in developing long-range plans for the over-all company.
  - a. Assist in determining direction of company.
  - b. Assist operating divisions in developing divisional plans.
  - c. Participate in review of progress.
- VII. Analyze cost data to develop overhead rates for use in pricing intercompany transactions and other uses. Provide assistance for developing interdepartmental service charges.
  - a. Research Department cost rates.
  - b. Factory overhead rates.
  - c. Others.
- VIII. Maintain competitive company and customer financial data
  - Appraise interim and annual financial reports and alert management to significant facts or trends.
  - Become acquainted with operating and financial arrangements of other companies for practical application in Clark Chemical Company.
  - c. Maintain scrapbook of competitive company and customer articles found in current periodicals.
  - IX. Maintain economic statistics not kept elsewhere in the company.

Indicated below is the manner in which the Financial Planning and Analysis Group would carry out the program. The numerals below correspond directly with those on the outline of the program.

I. This group would, in conjunction with top management, determine the necessary information to be requested from the various divisions and departments to develop the several plans and programs. The group

- would coordinate the flow of information and physically put the data in finished form ready for evaluation. The group, where possible, would make constructive suggestions or recommendations concerning the data developed and the problems encountered—recommendations both to division managers and to top management.
- II. The group would become involved in these special studies most likely as a result of a request from division managers or top management and would participate at the time of developing the figures and, thus, be in a position to see that all financial aspects have been considered.
- III. Projects in this area would be started at the initiation of this group, top management, or the divisions with the objective that recommendations for constructive action would result. Work on product line studies would be done in conjunction with divisional personnel.
- IV. Work in this area would usually take place during budget preparation periods or when sudden changes in plans appear imminent. Initiation during times other than budget periods would probably come from top management or operating personnel. However, this group might recommend to management changes in the course of action from time to time.
- V. This category covers reporting to top management and divisional personnel and would be done at the initiative of the group.
- VI. In the long-range planning area the group should be a participant, contributing ideas and making necessary studies as well as commenting on progress.
- VII. Most of the functions in this area would be performed at the request of the operating divisions or staff departments.
- VIII. Functions in this area would be accomplished both at the request of top management and divisions and at the initiation of this group.
  - IX. The accumulation of economic statistics would be done on a routine basis and would be restricted to those statistics not maintained elsewhere in the company.







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